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ORIGINAL COMMUNICATIONS.

ART. I. *On Projection; or, the different Modes of delineating Elevations, commonly called Isometrical.* By Mr. PETER NICHOLSON, Author of the "Architectural Dictionary," and other Works.

My only wish, in presenting this paper upon Projection to your notice, is to make the subject clear to the understanding of the reader, and to prevent the dissemination of wrong principles.

Projection in general is the art of delineating the representations of objects upon a plane, so that straight lines, passing, according to a given law, through or from the lineal parts, or the contour, of the object, may fall upon the corresponding lines of the drawing. The straight lines passing between the object and its representation are called rays, or projecting lines; the representation is called the picture, or projection; and the plane is called the plane of projection. If the law of the projecting lines be that of converging to a point at a limited distance, the picture is called a *perspective projection*. If the law be that in which the projecting lines are perpendicular to the plane of projection, the representation, for subsequent reasons, is properly called *orthographic*, or *orthogonal projection*. If the projecting lines are parallel among themselves, and oblique to the plane of projection, the projection as yet remains without any name by which it can be generally recognised.

In order to show the discrepancy in the use of terms, the learned Dr. Brook Taylor, in his *Linear Perspective* (published in 1715), employs the words plan and elevation (see p. 21.) in the same sense as they are also used at the present time by architects and surveyors, not only for building, but for all geometrical solids, whether reposing upon a face, or an angle in any position. In p. 26., he says, "The reader may exercise himself in drawing the representations of the five regular solids, in order to which their plans and profiles may be found in the following manner:" which he goes on to describe. It is somewhat extraordinary, that, in his *New Principles of Linear Perspective* (published in 1719), which have been followed by the

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best modern writers on the subject, he uses the terms *ichnography* and *orthography* (p. 3, 4.), instead of the familiar expressions, plan and elevation, as in his former treatise. He observes (p. 4, 5.) that "These are the common definitions of the terms ichnography and orthography; but we shall hereafter use them to signify any two projections that are made by systems of parallel rays, when these systems are perpendicular to each other, and to the plane on which the projections are made." In this kind of projections, the projection of any particular point or line is sometimes called the seat of that point or line in the plane of projection.

In a work recently published (1834) *On Practical Geometry, Linear Perspective, and Projection*, under the superintendence of the Society for the Diffusion of Useful Knowledge, the author, Mr. Thomas Bradley, has included under the term orthographic projection, not only projection made by a system of parallel rays perpendicular to the plane of projection, but also projection by a system of parallel rays oblique to the plane of projection; and what has been generally called orthographic projection, he calls plans or elevations (p. 230.), accordingly as the plane of projection is supposed to be horizontal or vertical. Plans and elevations of common buildings are the easiest description of geometrical solids, being generally rectangular parallelpipeds, having two faces parallel, and four perpendicular, to the plane of projection. Bishop Horsley, in his *Elementary Treatises on Practical Mathematics*, and the late Professor Vince, call that species of projection in which the plane of projection is perpendicular to the rays by the term *orthographical projection* in its proper restricted sense. The projection of the sphere made by lines perpendicular to the plane of projection is called properly, by all authors, the *orthographical projection*. Professor Young, in his *Treatise on Analytic Geometry*, employs the term orthogonal projection in its limited sense, and very properly, as the word *ortho* signifies right. In geometry the words right and oblique are contrasted together, as a right cone, a right cylinder, &c.; an oblique cone, an oblique cylinder, &c. Projection, therefore, whether considered from a system of converging or parallel rays, is only right or oblique. In that species of orthographical projection in which the right-lined representations have the same proportions among themselves that the originals have, an improper use is made of the word perspective (introduced by Professor Farish), by calling this species of representation *isometrical perspective*, instead of *isometrical projection*. By such an indiscriminate use of words, those who have read one author will get into confusion when they come to read another.

Every kind of projection may be well elucidated by the doctrine of shadows; placing a wire frame, paneled with glass' repre-

senting the external form of the object between the luminary and plane of projection. If the object be exposed to the rays of a luminous point, which the flame of a lighted candle may be supposed to be, we may have every possible linear perspective projection of the object, more or less agreeable accordingly as the luminous point is more or less remote, or as the plane of projection is perpendicular or inclined to the middle ray. If the paneled frame form a rectangular parallelopiped, and if one of the faces be parallel to the plane of projection, the opposite face will also be parallel, and the four adjacent faces perpendicular, thereto. In like manner, if the paneled frame be exposed to the solar rays, from the distance of the luminary, they may be considered as parallel; we shall then have every possible kind of projection made by a system of parallel rays, more or less agreeable accordingly as the plane of projection is perpendicular or inclined to the rays. If the paneled frame form a rectangular parallelopiped, and one of the faces be parallel to the plane of projection, the opposite face will also be parallel, and the four adjacent faces perpendicular, thereto: in this case, if the projecting lines fall perpendicularly to the plane of projection, the projection will only consist of one rectangular figure, which is the projection of the two faces parallel to the plane of projection; the other four faces being projected upon the edges of the rectangle. This is a case in orthographical projection of the usual form and position of buildings: but, if the projecting rays fall obliquely upon such a paneled frame, the faces that were parallel to the plane of projection will be projected into two separate rectangles, and the four adjacent faces generally into oblique-angled parallelograms. The method of finding the projections of such objects in such positions, for the want of an appropriate name, has been called parallel projection, in analogy to the improper term parallel perspective. The terms parallel perspective and parallel projection would not be generally recognised, when the object is not comprised under rectangular faces.

In projection by a system of parallel rays, the rays, taken collectively, form a prism of which the projection is the base; such a projection may therefore be called a *prismatic projection*. If right, it may be called an *orthographic projection*; and, if oblique, an *oblique prismatic projection*. In perspective projection, the system of rays forms a pyramid, the picture being the base, the point of sight the vertex, and the perpendicular from the point of sight to the base the distance from the eye to the picture. All perspective projections which have the foot of the perpendicular within the base, or picture, may be termed right perspective, and such representations as have the foot of the perpendicular without the outline of the picture, or base, may be termed oblique perspective. At a given distance of the eye from the picture,

the nearer the foot of the perpendicular is to the middle point of the outline of the space occupied by the drawing, the more agreeable the picture will be. But under every circumstance, even supposing the picture placed between the eye and the object, when the angle made by the projecting lines, or any portion of them, and the perpendicular is very great, many of the projections of straight lines will be greater than their originals. Anamorphoses belong to this species of projection. We cannot say, in any case, however monstrous or distorted, that the perspective is false, if the picture is drawn by the proper rules; for, if such a picture be viewed opposite the foot of the perpendicular from the eye, at a distance equal to the perpendicular of the pyramid, the image will be perfectly natural. Dioramic views verify the truth of perspective representations upon a plane. Similarly, the projection of solids upon a plane perpendicular to parallel projecting lines is much more natural than that of parallel lines upon an oblique plane. In the former case, the projection of no line can be greater than its original, but generally less; in the latter case, the projection may be less or greater than the original, as the angle which the rays make with the plane of projection is greater or less than 45 degrees; but in no case can a projection be called false, even though some of the lines in the projection may be greater than the original.

In the volume on geometry, published in the *Library of Useful Knowledge*, your readers will find a portion devoted to the theory of projection, in which the theorems are elegantly demonstrated, both in regard to a system of converging, and a system of parallel, rays. The writer of that article comprises under the head of orthographical projection both systems of projection by parallel rays. Mr. Bradley, in a subsequent volume, before quoted, uses the term in the same sense; perhaps in compliance with the original definition in the anterior publication on geometry. He even prefers the projection of some solids by a system of parallel rays upon an oblique plane, to that upon a plane to which the rays are perpendicular, as is evident when he says (p. 235.), "Orthographic projection is hence peculiarly applicable to the representation of small bodies, as crystals, which would naturally be viewed from such a distance in proportion to their size, that the rays would approach nearly to parallel lines; and, on many occasions, the construction of such projections is rendered considerably more easy, by assuming the projecting lines as oblique to the plane of projection."

Perhaps your correspondent, Mr. J. R., has neither seen nor heard of the one nor the other of those two volumes; if not, I would recommend them to his perusal before he makes another attempt at reviewing the works of others; and, if he writes under the conviction of mathematical principles, he will not be ashamed

of his name and residence appearing in public. Though I do not approve of Mr. Bradley's definitions, as before specified; nor of the preference which he gives to the projection of certain solids by a system of parallel oblique rays, over that upon a plane perpendicular to the rays; the author is too transcendently acquainted with the principles of mathematics to commit a falsehood. Those, however, who maintain that a projection is false, because some of the lines are greater than their originals, maintain a falsehood, as has been here made evident.

Newcastle upon Tyne, July, 1835.

ART. II. *A short Sketch of the Amusement afforded to Architects who choose to waste their Time by submitting a Design in a public Competition.* By a DUPED ARCHITECT in the 19th Century.

THE following account of a public competition is in illustration of the above; and, I think, not out of place, considering that there is now under consideration a national work in the above shape: therefore the public, and the profession in particular, cannot be too vigilant in watching its progress. On the 29th day of May, on perusing the *Morning Advertiser*, a paper I do not see perhaps once in a year, I chanced to alight on an advertisement addressed to architects, notifying that a public body wished to receive plans for a proposed new school, which it was the intention of the trustees and committee of this public body to erect; and that any parties who thought proper to submit a design, were to declare their intention of so doing, by addressing a letter to X. Y., Dean Street, Soho. Through the channel indicated, I, amongst many others, proclaimed my resolution to the above effect; and, after waiting several days, I received a reply, naming 127. Fleet Street as the place, and between ten and twelve o'clock as the time when I was to have an interview on the subject of my letter to X. Y. At this interview I received a printed paper, purporting to be "particulars relating to the building proposed to be erected in lieu of the present Licensed Victuallers' School, in Kennington Lane, Lambeth." I asked some question relative to the proposed building, but received as an answer, that "no further information than that contained in the printed particulars would be given." This enlightened printed paper began by observing that accommodation for 250 children was required; that the building was intended to be of brick, with a *stone portico*; that the front of the building was to be faced with stone, as high as the first floor; and that it was to be built in a style of *simple elegance*, keeping in view, as much as possible, economy; that the plan of the school was to provide for a complete separation of the boys from the girls;

and that the proportion was rather more than three boys to two girls. It then gave a list of the rooms and offices which the building must contain : after which, it requested that plans and elevations (sections being of no consequence) might be sent to the secretary, at No. 127. Fleet Street; and that every design should be accompanied by a *sealed letter*, addressed to the Trustees and Committee of the Licensed Victuallers' School, and indorsed, "Plan for a New School," together with a *private mark or motto*, corresponding with a similar mark or motto to be placed on the plan transmitted with the letter. Also, *no letter* would be *opened*, except those of the successful competitors for the two premiums, and all other letters would be returned *unopened*. Now, in the first place, the architect was obliged, by dictation, to have a portico, no matter in what style (most probably the style had been agreed upon beforehand, I only say most probably). But consider what an opportunity was afforded with this portico, and the ground story high-faced with stone, for a display of simple elegance, and a decided veto on any profusion of ornament or architectural embellishment : although I must confess that is greatly against the general practice where a Licensed taste is consulted ; but no doubt it had been resolved upon after the most mature consideration of the gentlemen trustees and committee. The next portion to which I beg to call your attention is that usual appendage respecting sealed letters, private marks or mottoes, and unopened letters, which, to all appearance, promised a noble disinterestedness and indescribable impartiality ; in fact, a spirit-level kind of justice ; and, not being able to resist such a glorious display, I fell a victim.

After two days' labour on my plans, &c., I received a letter to say, that the plans and elevations were to be sent in on the 27th June ; that they were to be drawn to a scale of six feet to an inch, and that the successful candidate was to furnish a duplicate of his plan, &c., *gratis* ; all this having been omitted in the printed particulars : it necessarily followed, that what had been done became useless, it having been drawn to a wrong scale. To begin afresh was therefore compulsory, and I began proceeding with my plans until the 12th of June, when comes another letter, to say that the time for sending in the plans and elevations was extended to the 11th of July, and that the committee did not pledge themselves that the successful competitor should superintend the erection of the new school, although he was to furnish a duplicate of his design gratis. Notwithstanding this noble meanness, I proceeded until the 19th, when another letter arrived, to say that some adjoining premises had been obtained, and that the same were at the disposal of the committee for building the new school ; it then went on to say, that, "as this unexpected addition would probably make considerable alter-

ations in the designs, the time for sending in the drawings would be extended to the 25th of July." A fresh paper of printed particulars was also enclosed, in which the various omissions and additions contained in the four letters were now embodied. The fortnight's time which had been spent on the design, the expenses which had been incurred, the other business which had been neglected, were considered by this Licensed Committee of Taste as duly appreciated in an enlargement of the time, because they had so far condescended as to imagine that there was a probability that, in consequence of this unexpected addition, a considerable alteration might be necessary in the design. Upon this third interruption, I had my doubts whether to proceed; but, upon further consideration, I arranged that I would, and the design, being completed, was forwarded on the 25th of July to the place named.

Having, of course, nothing more to do with the matter, I had now to wait the result, which I naturally did with some anxiety, having had the vanity to imagine that my design was worthy of notice; that it had its merits; in fact, having raised my expectations to that pitch, that I actually thought, although there was no probability of my gaining a prize, yet that it was not altogether a matter of impossibility: but, unfortunately for me, I learned on the Tuesday morning, 28th of July (the designs having been sent in on the 25th, Saturday), that the two prizes had been awarded; that the trustees and committee of the Licensed Victuallers' School had actually examined (at least, so I was told) forty-seven different designs (that being the number sent in) on the Monday, they having met early in the morning for the purpose; and within a few hours after noon they awarded the premiums. The only way to account for this rapidity of examination was, to suppose that this committee had such a profound knowledge of architecture, both as to theory and practice, as to be able to inspect these forty-seven different designs with the greatest facility, and to discover whether the various conveniences and accommodations required had been afforded, such as ingress and egress to all parts, yet a separation of boys from girls; light and good ventilation; a stone portico in a style of simple elegance; a ground story faced with stone; in fact, I must assume that a most minute, most careful, and most rigid investigation of the advantages and disadvantages, the conveniences and inconveniences, and of the good and bad qualifications of these forty-seven different designs, did take place, combined with a perfect disinterestedness, in a few hours of close application, and that by these means they became unanimous as to the two designs most eligible, and, as such, entitled to the rewards. What an awful scrutiny and fearful ordeal these two successful designs had gone through, and passed even to success! After this intelligence, I very natu-

rally enquired who these two fortunate candidates were: the first, I was informed, had been the architect to the trustees and committee of Licensed Victuallers for some time; and yet these gentlemen, who, by their perspicacity and innate knowledge of architecture, had been enabled to thoroughly investigate the merits and demerits of forty-seven different designs in a few hours, only now, and that, as I must suppose, by pure accident, discovered that the merits of their own architect's plan or elevation were so great as to entitle him to the first prize. This clearly proves that the trustees and committee of the Licensed Victuallers' School had hitherto been wholly incompetent to judge of the abilities of their own architect, he having, no doubt, submitted plans and elevations long before it was resolved that the public body of architects should be made use of. The second prize was awarded to one whose father, by some chance, had been connected with a brewery; and the motto system, of course, having been closely adhered to, this was an untoward event. The prizes having been awarded, the next thing was to return the forty-five unsuccessful motto-gentlemen designers their inefficient drawings; but this did not take place until the following Saturday, although the two premiums had been awarded on the previous Monday. What object could there have been in retaining possession of these drawings until the Saturday? Thereby hangs a tale, for I must not suppose any good ideas could be gained from the rejected designs.

With this I take my leave, and beg of every impartial reader to draw his own conclusion on the statement, from the beginning to the end of this unbusiness-like affair, including the omissions in one letter, the additions in another, and the happy conclusion to which the gentlemen trustees and committee of the Licensed Victuallers' School arrived.

London, Sept. 1835.

ART. III. *Remarks on Competition Plans, with another instance of partial Decision.* By W. L.

In the early part of this year, the workhouse board of the town of Leeds advertised for plans for a new workhouse, and offered premiums of 30*l.* and 20*l.* for the best and second best plans: stating, in their instructions to architects, that "the cost of the building was not to exceed 10,000*l.*" All the candidates for this undertaking, with one single exception, prepared their plans in accordance with the sum stipulated to be expended; and, in the distribution of the premiums, the workhouse board awarded the first to Mr. Perkins of Leeds, and the second to

Mr. Austin of London; the plans of these gentlemen being entitled to the same, according to the rule laid down by the board. Notwithstanding this, the plan which the parish authorities have recommended for adoption is not the plan which obtained the first premium, but the plan of a favourite candidate, who did not adhere to the instructions given him, but deviated from the same, by exceeding the sum proposed to be expended by upwards of 2000*l*.

Now, Sir, can this be called fair competition? Is it not unjust and dishonourable on the part of the judges in this competition, to lay down instructions for the guidance of *all* competitors in preparing their plans, and then to deviate from them for the purpose of adopting the plans of a favourite candidate? The terms of the competition should, in all cases, be strictly adhered to by the candidates, as well as by all judges in competitions of this nature; and, if this rule had been followed up in the present case, I am confident a very different decision would have been come to.

From this, and other communications on the same subject in this Magazine, it appears to me quite necessary that something should be done by the profession, to put a stop to such unprincipled decisions as those in question; and, if all my professional brethren would agree to act upon some general rules in cases of competition, such as those stated in page 325. or 377., I am of opinion it would afford that protection to the profession which is essentially necessary for its welfare, and be the means of instituting fair and impartial decisions in all cases of competition.

I should hope that all my brethren will take this matter into consideration, and assist those who have already used their abilities to remove the evils complained of: for my own part, I only wish for a "fair field and no favour;" and, when this old adage is fully adhered to, it must follow that merit alone will be the rule of decision in all cases of competition.

Yorkshire, August 31. 1835.

ART. IV. *Old Fuller's Ideas on Building.* Communicated by J. A. PICTON, Esq., Architect.

DIPPING the other evening into old Fuller's *Holy and profane State*, a singular book, but full of acute and shrewd remarks, I met with the following chapter, "Of Building," which I have been at the trouble of extracting, in the hope that, if you print it, it may amuse the readers of the Magazine as much as it has done me. Most of the observations are quite as applicable at the present day, as they were at the time of their being

written (the reign of Charles I.). If you think the extract worthy of insertion, be kind enough to preserve the orthography of the original, or it will lose much of its quaintness and piquancy.

28. *Warren Street, Liverpool, Feb. 18. 1835.*

"Of Building.

"He that alters an old house is tied as a translator to the original, and is confin'd to the phancy of the first builder. Such a man were unwise to pluck down good old building, to erect (perchance) worse new. But those that raise a new house from the ground are blame-worthy if they make it not handsome, seeing to them method and confusion are both at a rate. In building we must respect Situation, Contrivance, Receipt, Strength, and Beauty. Of Situation,

"*Chiefly choose a wholesome aire.* For aire is a dish one feeds on every minute, and therefore it need be good. Wherefore great men (who may build where they please, as poore men where they can) if herein they prefer their profit above their health, I refer them to their physitions to make them pay for it accordingly.

"*Wood and water are two staple commodities where they may be had.* The former I confess hath made so much iron *, that it must now be bought with the more silver, and grows dayly dearer. But 'tis as well pleasant as profitable to see a house cased with trees, like that of Anchises in Troy: —

" — 'quonquam secreta parentis
Anchise domus arboribusque oblecta recessit.'

Eneid, ii. 32.

"The worst is where a place is bald of wood, no art can make it a periwig. As for water, begin with Pindar's beginning, ἀριστον μὲν ὕδωρ. The fort of Gogmagog Hills, nigh Cambridge, is counted impregnable for want of water, the mischief of many houses where servants must bring the well on their shoulders.

"*Next a pleasant prospect is to be respected.* A medly view (such as of water and land at Greenwich) best entertains the eyes, refreshing the wearied beholder with exchange of objects. Yet I know a more profitable prospect, where the owner can only see his own land round about.

"*A fair entrance with an easie ascent gives a great grace to a building* where the hall is a preferment out of the court, the parlour out of the hall (not as in some old buildings), where the doores are so low pygmies must stoop, and the rooms so high, that giants may stand upright. But now we are come to Contrivance.

* Alluding, I suppose, to the great consumption of charcoal in smelting iron, before coke began to be used.

"Let not thy common rooms be severall, nor thy severall rooms be common. The hall (which is a pandocheum) ought to lie open, and so ought passages and stairs (provided that the whole house be not spent in paths). Chambers and closets are to be private and retired.

"Light (God's eldest daughter) is a principal beauty in a building: yet it shines not alike from all parts of heaven. An east-window welcomes the infant beams of the sun, before they are of strength to do any harm, and is offensive to none but a sluggard. A south-window in summer is a chimney with a fire in't, and needs the screen of a curtain. In a west-window in summer time toward night, the sun grows low and over familiar, with more light than delight. A north-window is best for butteries and cellars, where the beere will be sower for the sun's smiling on it. Thorow-lights are best for rooms of entertainment, and windows on one side for dormitories. As for Receipt,

"A house had better be too little for a day, than too great for a year. And it's easier borrowing of thy neighbour a brace of chambers for a night, than a bag of money for a twelvemonth. It is in vain, therefore, to proportion the receipt to an extraordinary occasion, as those who by overbuilding their houses have dilapidated their lands, and their states have been pressed to death under the weight of their house. As for Strength,

"Countrey houses must be substantives, able to stand of themselves. Not, like city-buildings, supported by their neighbours on either side. By strength we mean such as may resist weather and time, not invasion, castles being out of date in this peaceable age. As for the making of motes round about, it is questionable whether the fogs be not more unhealthful than the fish brings profit, or the water defence. Beauty remains behind, as the last to be regarded, because houses are made to be lived in, not lookt on.

"Let not thy front look a squint on a stranger, but accost him right at his entrance. Uniformity also much pleaseth the eye; and 'tis observed that free-stone, like a fair complexion, soonest waxeth old, whilst brick keeps her beauty longest.

"Let thy office-houses observe the due distance from the mansion-house. Those are too familiar which presume to be of the same pile with it. The same may be said of stables and barns; without which a house is like a city without works, it can never hold out long.

"Gardens also are to attend in their place. When God (Genesis ii. 9.) planted a garden eastward, he made to grow out of the ground every tree pleasant to the sight, and good for food. Sure he knew better what was proper to a garden, than those, who now adays therein only feed the eyes, and starve both taste, and smell.

"To conclude, in building rather believe any man than an artificer in his own art for matter of charges, not that they cannot, but will not be faithful. Should they tell thee all the cost at the first, it would blast a young builder in the budding, and therefore they sooth thee up till it hath cost thee something to confute them. The spirit of building first possessed people after the flood, which then caused the confusion of languages, and since of the estate of many a man."

ART. V. *A few Observations on Church Towers.* By EDWARD BRIGDEN, Esq., Architect, Bristol.

PERHAPS there are few tasks of greater difficulty to the architect, than that of adapting a tower to a church designed in a classical style, whether it be Grecian, or Roman, or a modification of either. This difficulty is sometimes equally felt in a new building, where the architect has the power, in some degree, of adapting the structure to the tower, and the reverse, as in adding to a building already erected. In the Gothic style of course no difficulty exists, as tall spiry forms are its main and prominent features; but in classical architecture the lines are horizontal, and a lofty tower erected on such a composition must produce emotions of an unpleasant kind, as harmony, a principle of paramount importance, is entirely violated.

We know that the vulgar prejudice is in favour of *lofty* towers, and that an architect is sometimes compelled to sacrifice his own ideas of propriety to please the taste of the many: not that aspiring towers are to be objected to, for I consider them to be the greatest beauty of which a city can boast; but that we should endeavour to adopt some plan by which the incongruity of placing perpendicular lines in such a connexion with those of a purely horizontal nature may be avoided.

It has often been noticed, that the most objectionable practice is to raise a tower above (or rather upon) a temple, or an adaptation of the temple form. It seems difficult to determine why the form of a temple should be such a favourite with our modern architects, considering the general inapplicability of such a structure to the uses of a Christian church: for the beautiful peristyle must be abandoned; windows must be introduced in the flanks; and the roof must be anything but what appeared on a temple of antiquity: to say nothing about the necessity, perhaps, of obtaining accommodation for a peal of bells; to provide which accommodation a tower is often placed on the apex of the roof, and appears to be supported by it. In buildings of this kind, two inconsistencies are winked at; namely, this incongruity of the roof seeming to be the foundation of the steeple,

and the want of accord in the main lines of the two parts of the edifice. This has, doubtless, led to the idea of raising a superstructure above the church, immediately at the back of the portico, that rises pyramidally, and upon which the steeple is placed: of this an example may be seen in the church in Eaton Square. It may be admitted that this contrivance prevents the tower from appearing to rise out of the roof; but then it gives an air of great depression to the portico, especially when viewed in front; and the discordance between the different lines is not avoided.

If a temple form be observed, no more should certainly be placed on it than a small turret; and this not a little temple, adorned with columns, that can have no possible appearance of being any useful appendage, or of performing any useful office, but a light ornamental accessory of subordinate character; for columns in towers generally suggest the idea that they are the only ornaments architecture can command in such a situation. A contrivance might be adopted to conceal the bell behind the tympanum, and thus a considerable saving in expense might not only be effected, but the means afforded of adding some additional richness to the body of the church, which no one who has noticed many of our modern churches would have cause to regret.

If the portico, instead of extending the whole width of the front, consisted only of four columns, a tall tower would be less objectionable, as the outline of the portico would approach nearer to the vertical (at least, in comparison with a hexastyle portico). But if the tower be carried up from the ground, the eye, in following up its outline without interruption, is not offended by any want of harmony. This we shall find to have been the practice, in most cases, of the architects of the time of Queen Anne; and it is to be observed, that they always made the lower part plain and bold, the whole composition increasing in lightness as the pile ascended.

The Italian method of erecting the campanile separately from the church might, I think, be adopted with success in many cases; and our church builders would not be altogether without authority, as there are examples of this nature in England of considerable antiquity. The architect, in this case, would not be confined in his design, and the public taste for tall belfries would be gratified at the same time.

Bristol, Aug. 5. 1835.

ART. VI. *Street Houses of the City of New York.* By WILLIAM
Ross, Esq., Architect.

IN my former communications [which, unfortunately, never reached us] I only alluded to the general principles, as it were, of the buildings of this city; in the present paper I intend to go more into the details. Of the general sameness of design (or rather want of design) in the street fronts of the houses, I have already spoken [in the lost papers]; and I likewise mentioned that the new houses are built much more substantially here than they are about London; but, on further acquaintance with the subject, this remark must be taken with great latitude. A much greater quantity of timber is, indeed, used in the joists and roof than in England; but the want of consideration which is shown in its application, as well as of scientific skill in its distribution, more than counterbalances this advantage. The fire law requires, for the prevention of fires, that no wall be built less than one foot thick; and the builder takes too good care of his bricks (which are here 8 in. long, 4 in. wide, and about 2 in. thick) to make them any thicker (i. e. than a brick and a half). When we consider that some houses are six stories high above the street, and two below its level for cellars and basement, it is evident that the practice of loading the walls with timber does not add to their stability.

While writing this paper an alarm of fire was given in the neighbourhood, in a large house of four stories above the ground. The side wall has fallen, crushing the roof and considerably injuring the adjoining house, or rather store, which was at least 12 ft. distant from the one on fire, and would otherwise have escaped damage, as the wind was in a contrary direction. By the way, fires are so frequent here, that they excite no alarm (except in strangers, for the first night or so); and the rule is, if the alarm is given during the night, to put the hand on the wall at the head of the bed, and, if it feels rather warm, to get up; but, if otherwise, to turn about and go to sleep again.

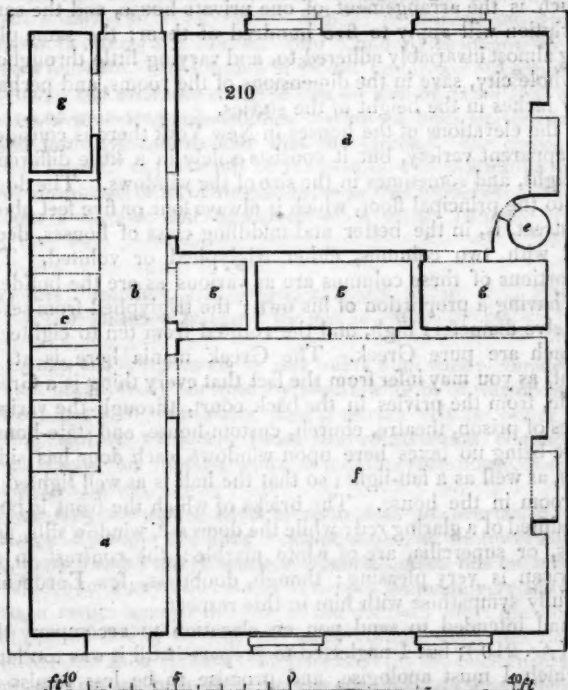
To return: many of your readers may not be aware that the streets of all the cities in the United States are laid out in parallel lines, crossing each other at right angles, or nearly so, and at nearly equal distances apart. This will, in some measure, account for the sameness and monotony which I formerly alluded to in their appearance.

"Street answers street, each alley has a brother,
And half the city just reflects the other."

Each lot or building site occupies, as near as may be, 25 ft. frontage, and 100 ft. in depth. Of this depth the house occupies from 45 ft. to 55 ft.; the remainder is used as a court, at

the far end of which are two Greek temples, dedicated to Cloacina; the only access to which is through the open court, exposed to all the rain and snow, and to the view of all the back windows in the house. These temples are placed immediately over the cesspool, into which, also, all the waste water from the house is thrown, and the whole surface exposed to the air when the flaps are left open. I leave to your pen to point out the effect of this arrangement, as it is more able to do it justice than mine. Yet there are officers styled "Inspectors of privies and cesspools."

I have already said that the greatest difference of design consisted only in the number of stories in height, and in the height of the stories themselves; so that I will now say something of their arrangement in plan. The lower, or second, story down from the street is intended for cellars, and need not be particularly described; the one over this is called the basement. (*fig. 210.*) In this plan there are, the entrance, *a*; passage, *b*, which is in



length the whole depth of the house; staircase, *c*; kitchen, *d*; oven, *e*; and in the front is the large room, *f*, the windows of

which look into the front area, and where the family live, except when they have company. There are four closets, *g*; two entering from the passage, and one from each of the two rooms.

The rooms are all divided by quarter partitions, seldom, if ever, trussed; the sides are all battened out from the walls and lathed; and to this circumstance is attributable the oversight I committed in my last, when I said that the houses here were built more substantially than in London.

On the principal floor the arrangement is much more simple than on the basement, there being only two rooms, communicating by folding or sliding doors, and the hall or passage, which likewise contains the staircase. These rooms, called the dining and drawingrooms, are, generally speaking, only used for company; the family usually living in the basement, as before observed. On the next, and all the upper floors, the arrangement is the same as on the basement; that is, there are only two rooms, a front and back bed-room, with closets in each.

Such is the arrangement of one private house, and the same description will apply to five hundred of them; the same plan being almost invariably adhered to, and varying little throughout the whole city, save in the dimensions of the rooms, and perhaps a few inches in the height of the stories.

In the elevations of the houses in New York there is considerable apparent variety, but it consists solely in a little difference in height, and sometimes in the size of the windows. The door-case to the principal floor, which is always four or five feet above the street, is, in the better and middling class of houses, decorated with two columns, either triglyphed or voluted. The proportions of these columns are as various as are the builders, each having a proportion of his own; the triglyphed from seven to twelve diameters high, and the voluted from ten to eighteen: yet each are pure Greek. The Greek mania here is at its height, as you may infer from the fact that every thing is a Greek temple, from the privies in the back court, through the various grades of prison, theatre, church, custom-house, and state-house. There being no taxes here upon windows, each door has sidelights, as well as a fan-light; so that the hall is as well lighted as any room in the house. The bricks of which the front is built are painted of a glaring red; while the doorcase, window sills, and lintels, or supercilia, are of white marble: the contrast to an American is very pleasing; though, doubtless, few Europeans will fully sympathise with him in this respect.

I had intended to send you an elevation to accompany the plan (*fig. 210.*); but I neglected to prepare it till it was too late; for which I must apologise, and promise to be less remiss in future. I will, if possible, send it with my next. The roofs are now generally covered with tin, as lead will not stand when exposed

to the great difference of temperature which occurs here between the winter and summer; it is about 118° . There are few or no parapets; those that exist being only boards over the cornice, which is also of wood, and generally consists of an entire Greek Doric entablature, nailed on the front of the house; having the gutter formed in the upper surface, and the rain-water pipe, which is likewise of tin, carried down the front of the house. The entablature of each house returns on itself, so as not to overhang the adjoining property; and the decorations, including the mutuli and guttæ, are all painted white, to harmonise with the door-case, &c.

You will think I have drawn no very flattering picture of the architecture of New York; but, like London, there are a very few structures which may command considerable praise; but then, they form the exception, and not the rule.

The New York University is a mountain of white marble and brick, with Italian details, more incongruous than those of Wren's towers of Westminster Abbey; it is more indebted to the woodcutter (Mr. Mason, from London) than any work I have ever seen. In London it would be termed "Carpenter's Gothic;" but even that can give you no idea of its hideous abortions and monstrous absurdities. With such a specimen as this before their eyes, no wonder that the Greek, "the classic and simple Greek," is preferred by the people, who will not be gulled into admiration of any thing so *outré* as this university.

New York, Dec. 31. 1834 (received April 17. 1835).

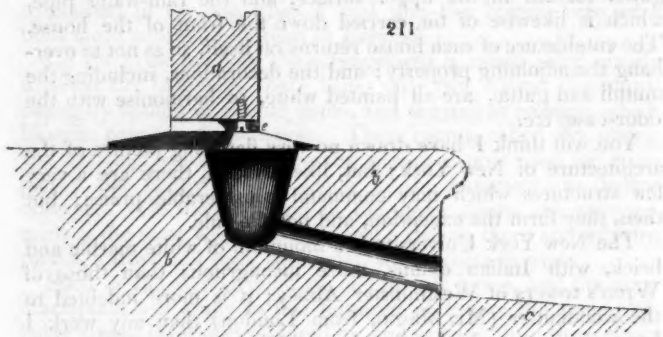
ART. VII. *On an improved Metallic Saddle for the external Doors of Dwelling-Houses.* By ROBERT MALLET, Esq.

THERE are few persons in our rainy and windy climate who are not occasionally annoyed by the blowing in of wet under the bottom parts of their outer doors, particularly in winter, and during stormy weather. From the construction common in outer doors, this inconvenience is felt in every house, from the hut to the palace.

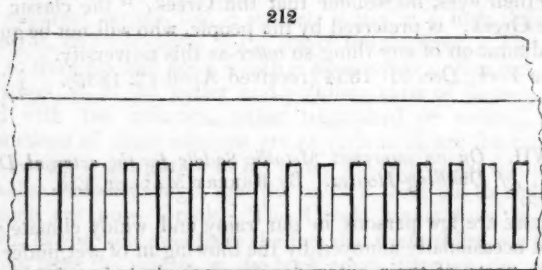
The only attempt I have hitherto seen to prevent it is by means of a hinged or falling weather-board, at the lower edge of the door, which rises when it is opened. But this contrivance is subject to many objections; it cannot be made very light, as, if so, it rattles against the face of the door-sill when the door is shut; it must run on one or more rollers when the door is opened; and then it marks the floor, or cuts the oilcloth, if there happen to be one beneath it, besides making a disagreeable noise when the door is opened or shut; and, *malgré* all this, the thing does not answer the purpose for which it was intended, as in

strong winds it always lets the rain come through the hinged joint.

To remedy all this, I propose the following contrivance, which, it seems to me, would be effectual. *Fig. 211.* represents a section of a sill, and part of the bottom of the door, arranged



in the way proposed; *a* is the door; *b*, the stone step or sill; *c*, the flags outside; *d*, a brass or cast-iron saddle, cast with cer-



tain perforations in it, as shown in its plan in *fig. 212.*, and in cross section, nearly at full size, in *fig. 213.*



the door. The saddle (*d*) may be either of brass or cast iron (the former is to be preferred), running all the way across the door, and placed, as shown in *fig. 211.*, over a deep channel cut likewise all the way across the stone sill. The saddle is secured

To the outside edge of the bottom of the door is screwed a straight strip of brass (*e*), about one inch wide, and projecting its own thickness (about five sixteenths of an inch) below the bottom of

by screws at intervals, let into lead plugs run into holes in the stone sill, or into oak plugs driven into the holes, and its ends are let into the jambs at each side. The perforations, or parallel slits, in the brass or iron saddle are placed over the channel in the stone sill, and the latter has one or more holes opening outwards upon the flagging from it, to empty it of water.

Now, the outside edge of the door is so placed, with respect to the perforations in the saddle, that it shall overhang them at about the middle of their length, and be so arranged that the saddle and the brass strip shall make a close joint of about three eighths of an inch wide inside the perforations. By this simple arrangement, it is obvious that all the water that either runs down the front of the door, or is driven by the wind against it, will fall off its lower overhanging edge, and so run into the channel beneath, and be carried off.

There can be no difficulty in the execution of this plan to any moderately good workman; but the hinges of the door must be good ones, so as not to sink and make the door bind. Rising hinges, that would not elevate the door more than one eighth of an inch, but that should elevate it to this height nearly at once, or within the first foot of motion in opening the door, would be the best, and of these probably none are better than Redmund's patent chilled cast-iron ones, or Collinge's.

It is hardly necessary to add, that the saddle should be bedded down in oil paint. When any accumulation of dust has been made in the stone channel, it may be removed in dry weather by blowing it out from the front apertures with a pair of common bellows.

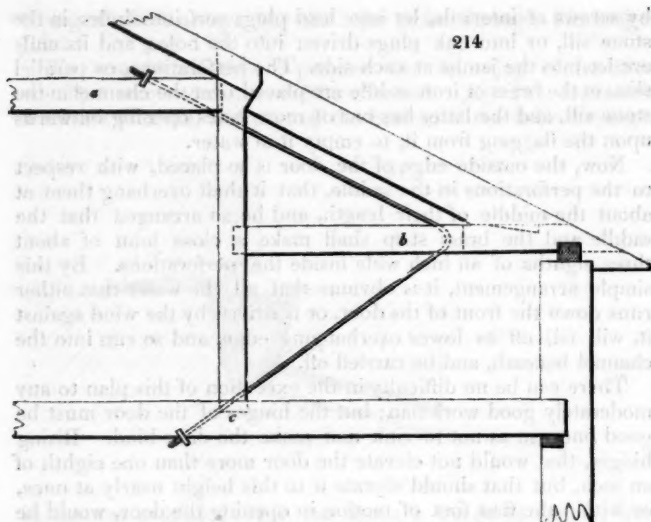
Should saddles of this kind be found to answer, perhaps the making of them may put a new source of business in the way of ironmongers, &c.

Dublin, July, 1835.

ART. VIII. *Description of a new Method of forming a Tie to a Roof, where a direct Tie from Wall Plate to Wall Plate cannot be introduced.* By W. COLES, Esq., Architect.

FIG. 214. is a plan which I have found answer well as a tie to a roof, where a direct tie from plate to plate could not be introduced; and, as far as I know, it is original. I introduced it in this neighbourhood in the roof of a cottage, in a case where the walls, having been carried up about 4 ft. above the floor of the attic story, a direct tie across the building would have prevented the communication from one room to the other.

In the figure, a truss on the suspension principle is formed by



a bar of iron (about three quarters of an inch in diameter), which passes over the collar of the straining beam *a*, through a mortise in the tie *b*, and down through the floor-joint at *c*, and is tightened with a nut and screw at each end.

Kingsgate Street, Winchester, April, 1835.

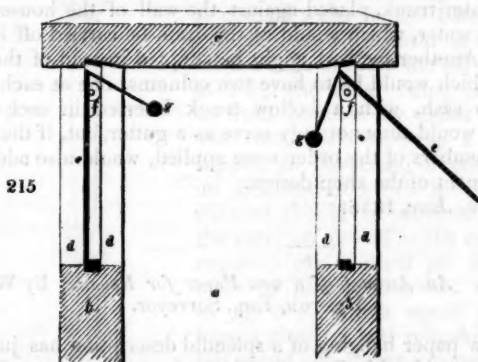
ART. IX. *A new Method of preventing Chimneys from Smoking, in Situations where the Smoke is liable to be driven down the Chimney by sudden Gusts of Wind.* By RICHARD VARDEN, Esq., Architect.

As many readers of the *Architectural Magazine* are interested in the cure of smoky chimneys, perhaps you will insert the following plan, which has occurred to me, for the remedy in certain cases.

Wind entering the upper orifice of a flue is the most frequent cause of this inconvenience, as the ascending column of smoke is overpowered and forced downward, till it is discharged into the apartment. This is found to take place in all exposed situations, during high winds from any quarter; and, where aerial eddies are formed by the obstruction of lofty objects, it occurs whenever the wind blows from a particular point. The many ugly and expensive pots, cowls, &c., often seen on the tops of chimney shafts, show the extent of the evil, and the exertions that have been made to surmount it; but I believe all the contrivances in use are uncertain as to their success, and that though

cowls are found to be the most efficacious, they have serious disadvantages: as they cannot be employed in rows without preventing each other from revolving, and so becoming useless; and, from their liability to be taken by puffs of wind in the throat, they occasionally, for a time, increase the evil which they are intended to remedy.

My contrivance is simply this: the top of the shaft is closely covered, and the smoke is allowed to escape only by apertures in the sides, each of which has fitted to it a shutter, hung on a pivot near the top, that will open in consequence of a balance weight attached to it when no wind blows against it, but which is so poised as to close directly when there is, and which will recover itself on the wind ceasing. This is done as shown in *fig. 215*: *a* is the flue, and *b b* are the side walls; *c* is the cover stone at the top, supported at the angles by the small piers *d d*;



ee are the shutters, hung on the pivots *ff*; and *gg* are the weights to cause the shutters to remain open when the wind does not blow against them. One side is represented open, and the other closed. The shutters are of plate iron, fixed in cast-iron frames; and the whole may be kept for sale in a complete state, and be fixed with little trouble. A single shaft may have four shuttered openings; but those in rows will require but two, and they should be on opposite sides. These openings, it is evident, must always allow of the smoke escaping on one side, and will prevent the possibility of the wind entering the shaft on the other, as it cannot at one time blow in contrary directions in the same place.

This contrivance will be more particularly serviceable in the neighbourhood of lofty hills or of high buildings.

Worcester, August, 1835.

ART. X. *Mode of preventing the Inconvenience which Foot Passengers are liable to by the dripping of Water from Shop Fronts.* By FREDERICK LUSH, Esq., Architect.

As the improvements in shop fronts in the streets throughout London are so rapidly increasing, and as more architectural display of ornament and good taste is daily exhibited, it is a great pity that one nuisance which arises from their construction has long passed unnoticed, and, of course, has not been obviated. Persons, in rainy weather, walking along the streets, are frequently annoyed by the drippings of the water from the tops of the shop fronts; and this inconvenience might be effectually remedied by having a small tin gutter affixed to the lead that lies on the weathering, by means of iron staples driven into the mouldings above the fascia to support it, and by connecting it with a water trunk, placed against the wall of the house, to receive the water, which would by the drain be carried off into the sewer. Another method might be adopted instead of the water trunk, which would be to have two columns, one at each end of the shop sash, with a hollow trunk inserted in each: these columns would thus not only serve as a gutter, but, if the appropriate members of the order were applied, would also add to the improvement of the shop design.

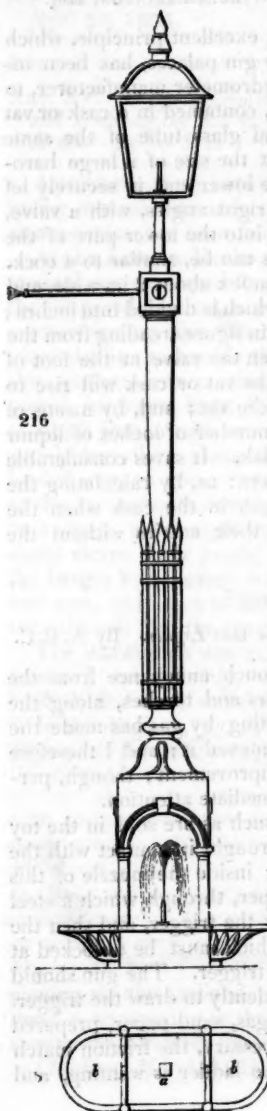
Hoxton, June, 1835.

ART. XI. *An Account of a new Paper for Rooms.* By WILLIAM LAXTON, Esq., Surveyor.

A NEW paper hanging of a splendid description has just been manufactured by Mr. Delereux, the embossed card manufacturer, who has been for many years at a considerable expense in bringing it to perfection. The pattern is embossed; in metals it is remarkably rich, particularly so with a flock ground. I was favoured with a view of a room that has been recently hung with this new paper, at the manufactory in Bunhill Fields, and was very much struck with it: the pattern was embossed in gold, with a dark green flock ground; and the effect produced was magnificent. Another pattern is in imitation of a very richly embroidered shot silk. A specimen of this paper has been submitted to His Majesty, who was very much pleased with its splendid appearance, and no doubt it will be introduced at the New Palace. The price varies from 1s. 8d. to 2s. per yard; and, in metal, from 2s. 6d. to 3s. 6d. per yard, according to the pattern.

Oxford Street, September 30, 1835.

ART. XII. Notice of a Method for supplying Dogs with Water, in large Towns, during the Summer Months. By Mr. W. J. SHORT, Surveyor.



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HAVING read in the newspapers that many persons have been bitten by mad dogs during the hot weather of last summer, it has occurred to me that, if the following plan for supplying them with water were fairly tried, it would do much to prevent the spread of this distressing malady, and be a great addition to the comforts of the poor dogs themselves.

As lamp posts are all cast hollow, a few in every street might be made to contain water in the bottom parts (*fig. 216. a*), with a basin on each side for the dogs to drink out of, as shown at *b b*; the water being easily laid on from the main by means of a pipe and cock. To keep up a constant supply, the policeman or other officer on the beat in which the posts are situated should be directed to turn the water on and off as the case might require; or a small jet might be made to play at intervals, as shown in *fig. 216.*, which would not only have a pleasing and refreshing effect, but would also insure a constant supply of pure water, without any attendance. The gas pipe, which now runs up the space proposed to contain the water, could be carried through one of the little columns at the corner.

The design, of course, may be much varied: those shown above are adapted for the posts now existing in Regent Street, London, and drawn to a scale of half an inch to a foot.

The experiment would be attended with only a very trifling outlay, which I am sure the inhabitants of the metropolitan parishes would not refuse to pay to obtain so desirable an object.

Clapham, June, 1835.

ART. XIII. *A Description of an improved Gauge for ascertaining the Quantity of Liquor in a Cask, without being at the Trouble of gauging it in the usual Manner.* By WILLIAM LAXTON, Esq.

A GAUGE, upon a very simple and excellent principle, which has just been introduced in the new gin palaces, has been invented by Mr. Fage, the celebrated hydrometer manufacturer, to show the quantity of liquor, in inches, contained in a cask or vat at any time. The gauge is a vertical glass tube of the same altitude as the cask or vat, and about the size of a large barometer tube, open at both ends. The lower end is securely let into a brass tube about 6 in. long, at right angles, with a valve, or stop-cock; this brass tube is fixed into the lower part of the side of the cask, as near the bottom as can be, similar to a cock. The glass tube is attached to a brass index about 2 in. wide, and of the same height as the glass tube, which is divided into inches; and the number of inches is engraved in figures reading from the bottom to the top. It is evident, when the valve at the foot of the glass tube is open, the liquor in the vat or cask will rise to the same height in the tube as it is in the vat; and, by means of the brass index, that it will show the number of inches of liquor in depth that there are in the vat or cask. It saves considerable labour and trouble to the excise officers: as, by calculating the quantity there is in each inch in depth in the cask when the gauge is first fixed, they can make their entries without the trouble of using the gauging rule.

ART. XIV. *Hints for the Contractors for Gas Lights.* By A. B. C.

FIFTY years ago the public felt much annoyance from the lamplighters running, with their ladders and torches, along the streets. Since then the mode of lighting by gas has made the nuisance less, but it has not entirely removed it; and I therefore submit the following, as a further improvement; though, perhaps, it is too simple to meet with immediate attention.

I would place a spiral spring gun, such as are sold in the toy shops, the muzzle of which must be brought in contact with the gas at the bottom of the glass lamp; inside the muzzle of this must be fixed some flints, or sand-paper, through which a steel file should suddenly strike by drawing the trigger, and then the spark of fire would ignite the gas, which must be unlocked at that instant by the same release of the trigger. The gun should extend low enough for the man conveniently to draw the trigger. If the sparks should not ignite the gas, sand-paper, prepared with saltpetre, may be used; or, if necessary, the friction match may be used. If successful in this, no ladder is wanting, and

half the space in time would be saved. This plan may be put to the test, in one, two, or ten lamps, for less than 20s. Little loss and much gain.

Sept. 18. 1835.

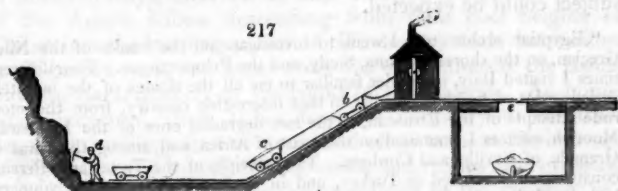
ART. XV. *Brief Description of the Method employed in excavating and removing the Soil of the New Cut and Entrance at the London Docks.* By W. J. S.

AMONG the many improvements introduced for the purpose of saving manual labour in the construction of public works, the steam-engine has been found the most useful.

At the London Docks the following simple and unexpensive method was employed to great advantage. At the extremity of the proposed new cut a platform was formed over a small dock communicating with the river Thames, so that barges might be moored there to receive the soil from above; and at the end of this platform was erected a high-pressure engine of ten-horse power, turning a large roller, round which a rope worked, and to which iron trucks, or waggons, were attached, and kept constantly travelling along the railway on the inclined plane; a loaded waggon going up to the platform, and an empty one down to the excavators below, at the same time. By this method, on an average, about eight waggonloads of soil, containing together about eleven cubic yards, were carried up and discharged into the barges below every ten minutes, with only the assistance of two men, and a boy to unhook the ropes from the waggons, and turn the soil into the barges.

The excavation was carried on night and day, without intermission; consequently, with the great assistance already described, the whole was completed in a very short time.

In the diagram, *fig. 217.*, *a* is the roller turned by the steam-engine; *b*, the empty waggon going down; *c*, the waggon loaded



coming up the inclined plane; *d*, the excavator loading a waggon; *e*, an opening in the platform, with a barge underneath to receive the soil from the waggons.

Clapham, March, 1835.

REVIEWS.

ART. I. *An Historical Essay on Architecture.* By the late Thomas Hope. Illustrated from drawings made by him in Italy and Germany. Royal 8vo, 2d edition. London, 1835.

WE have perused this work with a considerable degree of satisfaction; and we here intend to give a full account of it to our readers, the proprietor of the work, Henry Thomas Hope, Esq., M. P., the son of the author, having, on our application to him, kindly and liberally given us leave to make very ample extracts. We shall thus have an opportunity of laying before the young architect a connected view of the history of his art, together with some of the most ingenious theories which have hitherto been made public respecting some of the different styles of architecture; and this service will, we trust, be the more acceptable to young men, on account of the high price of the work from which we shall extract them, which price must necessarily prevent many to whom its contents would be highly desirable from becoming its purchasers. Those who can afford to purchase the work will, however, do well to do so, as they will find it beautifully printed, and illustrated by no fewer than ninety-seven engravings (chiefly in outline), admirably executed by the most eminent artists, from the author's drawings. When we take into consideration the number and the beauty of these engravings, and the historical and artistical interest which attaches to them, the work may truly be considered cheap at two guineas.

In the preface we are informed that the author, from his infancy, was always strongly attached to architecture. When scarcely able to hold a pencil, instead of attempting to delineate flowers and landscapes, he delighted in dealing in straight lines; and, becoming a master of his own actions at the early age of eighteen, he hastened, in quest of food for his favourite study, to almost all the different countries where any information on the subject could be expected.

"Egyptian architecture I went to investigate on the banks of the Nile; Grecian, on the shores of Ionia, Sicily, and the Peloponnesus. Four different times I visited Italy, to render familiar to me all the shades of the infinitely varied styles of building peculiar to that interesting country, from the most rude attempts of the Etruscan, to the last degraded ones of the Lombards. Moorish edifices I examined on the coast of Africa, and among the ruins of Grenada, of Seville, and Cordova. The principle of the Tartar and Persian construction I studied in Turkey, and in Syria. Finally, of the youngest branch of the art, that erroneously called Gothic, I investigated the most approved specimens throughout England, and most of the provinces of France, Germany, Spain, and Portugal.

"During eight years that this research lasted, I willingly encountered, to perfect myself in an art which I studied from mere inclination, and from which I expected nothing beyond the pleasure of understanding it, fatigues, hard-

ships, and even dangers, which would have disheartened most of those who follow it as a lucrative profession, and who build on it their hopes of subsistence and fortune. Soon after my roving life ceased, I determined to add practice to theory." (Preface, p. vi. vii.)

The work now before us, however, it is observed, presents but a brief epitome of the result of the author's studies and investigations, sketched as a relaxation from labours of a nature altogether different : —

" I, who, though of merchant's blood, am not a merchant ; who, though dabbling in authorship, rank not among the inspired ; who can neither uphold the arts with the hand of a sovereign, nor praise them with the pen of a poet ; who have only been able to bestow on a few humble artists the feeble patronage of an humble individual ; and who can only, athwart the din of trade, the bustle of politics, and the clamour of self-interest blinded by ignorance, raise in favour of the Fine Arts a feeble voice ; have done all I could : but the most general flame may begin in a single spark ; and should I succeed in kindling for the arts a purer, a more intense, a more universal love ; should I thus be instrumental in promoting in the country a new source of health, wealth, strength, vigour, and patriotism, and nobleness of mind and feeling, most copious and most lasting : in calling forth to the evils awaiting a society whose prosperity borders upon plethora and dissolution, the most powerful preservative ; I shall think myself the humble instrument of the greatest good that can be conferred upon humanity ; and when comes the hour of death, I shall think I have not lived in vain." (Preface, p. xii. xiii.)

Chap. I. *Introduction.* In all countries and ages, man has found the necessity of a more extended and stationary covering than mere attire. The nature of this was derived from his wants, and from the opportunities which the geographical circumstances in which he was placed afforded him of supplying them. The New Zealand savage digs a hole in the sand, little larger than that which he might require for his grave ; the Carib seeks a habitation within the trunk of a decayed tree ; and the Tartar, in the central plains of Asia, constructs a tent with the hides of those animals which serve him as food. It was only when men began to remain stationary in eligible situations in point of food, that they constructed mansions of wood, of baked or unbaked clays, or of brick, and finally of porcelain. Some of the Asiatic tribes, descending from their cool heights of Thibet into the burning plains of Hindostan, made habitations in the barren rock, and hence arose the excavations of the Bahar and the Barampooter, on the banks of the Ganges. As population increased, these tribes found it necessary to construct detached dwellings, first of stone, and afterwards, as the increase of population continued, of mud, reeds, and rushes ; thus passing from the extreme of imperishable solidity to the contrary extreme of perishable lightness in their habitations, though their temples and their tombs, requiring greater permanence, were constructed of stone.

(To be continued.)

ART. II. *A History and Description of the late Houses of Parliament and ancient Palatial Edifices of Westminster, &c.* By John Britton and Edward W. Brayley, Authors of numerous Antiquarian and Topographical Publications, &c. Nos. VII. VIII. and IX. for August, September, and October; 2s. each. 8vo. London, 1835.

THE embellishments to these numbers are, entrance to the crypt and cloister from the vestibule of St. Stephen's Chapel; cloister court after the fire; Westminster Hall, south-west end, from a window in the east side; plan with measurements of the cloisters, chapel, &c.; oratory, in the cloisters, St. Stephen's Chapel, section of west end, elevation of east end, &c.; view of the lower oratory; window of the crypt, St. Stephen's Chapel, plans, elevations, details; exterior and interior compartments of St. Stephen's Chapel; screen; crypt, western, looking west; capitals in the time of William Rufus; details of cloisters, &c., 2 plates; and several details. These engravings are beautifully executed; and they and the letterpress of the work are, in every respect, worthy of the celebrity of its authors. In No. ix. it is stated, that No. x. will be the last, and will contain, besides the remainder of the letterpress, some additional plates, the number promised to the subscribers in the prospectus (40) having been already given.

ART. III. *The History and Antiquities of the Cathedral Church of Worcester: illustrated by a Series of Engravings of Views, Elevations, Plans, and Details of that Edifice: including an Architectural Description of the Church, and Biographical Anecdotes of the Bishops, and of other eminent Persons connected with the Cathedral.* By John Britton, F.S.A. M.R.S.L., &c. 4to. London, 1835.

THE portion of the work to which the above title is attached is only the dedication, and a prefatory essay; the latter explanatory of the causes which have occasioned the delay of the publication, and the former highly and justly complimentary to the "late estimable and highly talented Mr. Thomas Hope," and to the present Henry Thomas Hope, his son, the editor of his father's *Historical Essay on Architecture*.

ART. IV. *An Address to the Commissioners appointed by His Majesty to examine and report on the Designs for the proposed new Houses of Parliament: to Members of Parliament, to Architects, &c.* By J. Britton and E. W. Brayley, the Authors of "A History and Description of the late Houses of Parliament and ancient Palaces of Westminster." Extracted from No. VIII. of that work.

AN ample extract from this tract will be of service not only to architects who are competitors on this occasion, but to the pro-

profession generally who are in the habit of entering into competition for public buildings :—

“ The plan which has been prepared under the directions of the Commissioners of Woods and Forests, for the use of the architects who propose to make designs for the new buildings, does not afford the information which the latter expected and required. Hence many of them have been lately occupied in procuring new measurements, and new surveys of many parts of the premises. Mr. Richardson, who has been in Sir John Soane's office for some years, has made and published a large and very elaborate plan of the whole site, and of the different buildings which cover the ground. This plan will be of great advantage to architects, and will also prove very interesting to statesmen, to antiquaries, and particularly to those commissioners and members of the two Houses, who are desirous of obtaining full information on the position, extent, and arrangements of the various buildings which have occupied this eminently historical spot for centuries.

“ From the very slight plan provided by the Government, and a miscellaneous and undigested series of printed particulars, the young, and even the old, architects are to prepare a set of designs for a mass of buildings of a most extensive, important, and commanding nature.

“ On the present, as on too many former occasions respecting great public works, there is evidently a want of a sound and wise system of procedure. The beginning wants union and organisation. Not only are the architects, who are desirous of competing for this great prize of honour and reward, subjected to many difficulties and ambiguities, but they are limited to a very insufficient time.

“ Can it be possible that this hurry, this excess of expedition, has some secret motive for its basis, and that, as the rumour runs, a certain architect is already chosen, and certain designs are already selected? Let us hope that the highly respectable commissioners will not permit such an act of injustice to be offered either to the profession or to the public. That profession and that public are, however, suspicious: they have been imposed on and trifled with too many times, in the affected show of public competition and impartiality, not to feel some apprehensions on the present occasion; they can neither forget the disgraceful transactions that belong to Buckingham Palace, nor approve the manner in which the new National Gallery has been smuggled into existence, nor altogether of the working out of that design. These things, and others of a like nature, make them regard with jealousy the proceedings of irresponsible advisers. In the present instance, there is an appearance of candour and fairness in the public competition; there are hopes held out, and emulation is roused; but misgivings and doubts occasionally flit across the minds of those who engage in the lottery. Certain commissioners have been named as judges of the proposed designs, but it appears that these gentlemen are not very fully instructed in their duties and powers; and although they are men of unimpeachably high character for private worth, for much knowledge of architecture, and of certain experience, yet it is feared that some of them, having their favourites in the profession, as well as strong partialities for particular styles and classes of building, may not prove strictly impartial umpires. It is also apprehended that other official channels through which the designs are to pass are still less likely to be impartial. Hence the adventurous architect has not only Charybdis and Scylla to dread, but many shoals and quicksands to steer clear of; and he cannot enter on his task of design with “ mind at ease,” with all the powers of invention and judgment unshackled and unclouded. Under such circumstances, would it not be both prudent and generous for the ministers of the Crown to recommend to His Majesty to authorise the commissioners already appointed to take all these and other relative matters into consideration, and adopt a plan for a fair, deliberative, and judicious commencement of the proceedings?

"After the deliberations and resolutions of two Parliamentary Committees, the appointment of five Commissioners, the cooperation of the Commissioners of Woods and Forests, and the professional Surveyors, it might be reasonably inferred that, up to this time, every thing had been done that human foresight and sagacity could suggest. But to prove that this is not the case, we need only particularise a few of the points on which the architects, and even the commissioners themselves, require decisive information, viz. what buildings already standing are to remain, and be incorporated with, or belong to, the new Houses? Are the architects at liberty, or required, to alter the exteriors of the Law Courts, and other buildings, to make up the design? To what extent is the great *Hall* to be used and appropriated? Is it agreed or recommended that the *Cloisters*, and the beautiful remains of *St. Stephen's Chapel* shall be preserved or renovated? May the architects design and recommend the appropriation of a Chapel, either new or restored, as a necessary part of the Parliamentary edifice? Would it not be advisable to make that Chapel also the parish Church of *St. Margaret's*, Westminster, and take down that trumpery, tasteless incumbrance, the present *St. Margaret's Church*? May the architect calculate on the removal of any, and what part, of the row of houses on the south side of *Bridge Street*? and also others on the east side of *Abingdon Street*, in order to display the northern and southern fronts of the new designs? Is it expedient to take down all the mass of substantial modern buildings recently erected from the designs of *Sir John Soane*, and now used for offices, libraries, &c.?

"These, and several other important matters should be settled and arranged between the commissioners and the architects, before the latter commence their designs; and which, being clearly defined, will enable them to proceed with more confidence and ease, will ultimately be productive of great economy of time and of money, and be also likely to produce beneficial results to all parties concerned, and to the national character.

"If the preceding remarks be thought by any person to be over-officious, to be uncalled for, or unnecessary, our plea is, that we entertain more than common anxiety for the preservation of the national character and taste in regard to the edifices in question; and are fully aware that the zealous and honourable feelings of many architects, and even their ultimate professional success in life, are involved in a fair and honest decision on this momentous occasion."

ART. V. *Thoughts upon the Style of Architecture to be adopted in Rebuilding the Houses of Parliament.* By Arthur William Hakewill, Author of the "Apology for the Architectural Monstrosities of London," &c. Pamphlet, 8vo. London, 1835. 6d.

MR. HAKEWILL is an advocate for the classic style; that "style, coeval with the rise and progress of the arts and sciences in Greece and Italy, the faithful companion of painting and sculpture in the progress of those arts to perfection, and ever their most powerful ally; characterised, too, by that same chasteness of feeling, which, like a pure atmosphere, ever encircles their domain; [which] has become so identified with the progress of refinement and civilisation, as to leave no doubt on the minds of the unprejudiced with regard to the propriety of selecting it in this instance as the style of architecture most suited to the intellectual character peculiar to the subject."

In a subsequent page (15.), Mr. Hakewill compares the Gothic style to a weed, and the classic style to a flower; a comparison which we do not think at all in good taste. Estimating the two styles by the quantity of mind displayed in their construction, it cannot be denied that the Gothic style has greatly the advantage; estimating their beauties by their effects on the minds of unprejudiced beholders is not such an easy matter; for there are few who can divest themselves of religious associations when viewing Gothic buildings; or whose prejudices do not lean either to the one style or the other, with reference to art. Almost all the great critics, however, allow that, as church architecture, the Gothic style is unrivalled. The classic style, divested of its ornaments, may be called the universal style; since upright posts, or walls covered by transverse beams, form the prevalent mode of building habitations in all countries in a state of civilisation. The classic style is also of universal application, and a cottage or a bridge may be built in it, as well as a House of Commons or a palace. The Gothic style is unfit either for cottages or bridges, speaking generally; but it might be applied to palaces and civic buildings, though churches and cathedrals are the edifices where it can be displayed in its greatest power. We speak of Gothic architecture, as the mode of building with high pointed arches; if the Gothic be considered as including flat-headed windows and doors, merely because they show certain mouldings over them, then we say that such Gothic is as universally applicable as Grecian; and the question will then lie, not so much between two styles of building, as between two styles of finishing or ornamenting. For our own part, we exceedingly regret that the commissioners did not leave the choice of the style to the competing architects. We should then have seen what Mr. Hakewill's enthusiasm for the classic style would have produced; and that of Mr. Pugin, or some other architect, for the Gothic; and perhaps we should have had an architect of reason, such as Mr. Fowler, who, we do believe, is without prejudice either the one way or the other, producing something original, and at the same time satisfactory; satisfactory, at least, to all who are not the slaves of precedent or prejudice.

ART. VI. *A Letter to A. W. Hakewill, Architect, in Answer to his Reflections on the Style for Rebuilding the Houses of Parliament.* By A. Welby Pugin, Architect. Pamphlet, small 8vo. London, 1835.

MR. PUGIN is as enthusiastic an admirer of the Gothic style as Mr. Hakewill is of classic architecture, and, apparently, with a greater knowledge of the subject. The whole pamphlet would

not fill half a dozen of our pages; but it is written in a spirited style, as the following quotation will show:—

"In order to support this exclusive use of what you term the classic style, you heap all kinds of contemptuous epithets on those edifices constructed during the middle ages; but which, allow me to say, will ever remain the pride and glory of the epochs in which they were erected; and, when brought in fair comparison with any other style, must, in the mind of every impartial judge, shine with complete superiority: the grandeur of their masses; the exquisite finish of their details; their bold and scientific construction; the light, and, at the same time, solid, manner in which they are erected; all must contribute to fill the mind of the beholder with admiration, and a profound veneration for the skill and perseverance of the ages in which they were produced. And although you bring forward St. Paul's Cathedral as a proof of the superiority of the other style, yet, without any disrespect to the great talents of Sir Christopher Wren, I have no hesitation in pronouncing St. Paul's as greatly inferior to many of those stupendous cathedrals which will for ever immortalise the architects of the middle ages. And I much question whether Old St. Paul's (before it was deprived of its gigantic spire, its exquisite cloisters and chapter-house, magnificent eastern end and massive nave, so accurately described by Dugdale) did not produce a more striking effect than the present structure: and I feel confident that, were Old St. Paul's in existence in the present day, and the question pending between a restoration or a new and different building in the Roman style, very few, besides yourself, would be found to support so dangerous and destructive a measure.

"I feel confident you speak only as you wish, not as you think, when you state that Gothic architecture is becoming daily more obsolete, an observation which I do not hesitate to say is decidedly false. Allow me to ask any person at all conversant with ancient architecture to look on the erections of fifty years ago, and even much less, in the style then termed Gothic, and many of those in the present day; and will they then not answer, that Gothic has made a prodigious stride towards its restoration?"

Mr. Hakewill had alleged that the Gothic style, if employed in the new Houses of Parliament, would not admit of the accompaniments of sculpture and painting, which Mr. Pugin pointedly denies.

"Thus, while the windows of a Gothic edifice may be rendered a glowing picture of almost imperishable materials, the panels of the walls and ceilings may be filled with the most varied subjects; and those who have ever seen the genuine works of that wonderful master, Albert Durer, cannot, for one moment, suppose the Gothic style inimical to the highest exercise of the art of painting, when one of its greatest professors flourished during its perfection, and whose works decorated several of its most beautiful edifices.

"I now come to that portion of your reflections where you apply the simile of weeds to the Gothic edifices of Westminster, impeding the planting of a beautiful flower, *id est*, a Greek temple.

"Till I read this, I did not believe that there was a single member of the architectural profession who would have ventured to speak in disparaging terms of, perhaps, the only buildings in the whole metropolis which are truly admirable.

"Thus, that vast and magnificent structure, the Regal Hall of Westminster, the sumptuous shrine and chapel of Henry VII., and the towering and venerable pile of the Abbey Church, which have ever been regarded as *chefs-d'œuvre* of the styles in which they were erected, and looked upon, by those who have souls to feel their extraordinary beauties, as an inexhaustible source of study and improvement; these buildings you term weeds, impeding the planting of

the Greek flower, which you wish to establish. Yes, Sir, they do impede it; for, while such wondrous proof of the consummate skill of the builders of the ages (termed by you barbarous) remain, you will have some difficulty in persuading the country that their vicinity should be disgraced by another of those half-English, half-Pagan erections which have so wofully disfigured the architecture of the last century.

"No, Sir; believe me, the day is passed when such enormities can be perpetrated: a feeling of admiration and respect for the noble works of our forefathers has arisen, which I trust and believe will never be suppressed. It has been discovered, that, in lieu of borrowing our architecture from foreign climes, we possess buildings whose character is more suited to our country and climate, and that, much as classic beauty may be admired in the countries where those styles flourish, still to sacrifice the varied and applicable styles which were employed in our country during the middle ages, for the dry and monotonous temples of Athens, shorn of their principal characteristics of gigantic size and simplicity, to render them at all fit for present purposes, is a folly that is every day growing more glaring; and as errors, when perceived, give hope that they will be amended, I trust fully that Anglo-Greek will shortly cease to exist, except in the buildings erected during the last few years, whose slight constructions give great hopes of their speedy decay,—a result most fervently wished for by yours most truly—*A. Welby Pugin.*"

ART. VII. *Answer to "Thoughts on Rebuilding the Houses of Parliament."* By Benjamin Ferrey, Architect, Author of the "Antiquities of Christ Church, Hants." Pamphlet, small 8vo. London, 1835.

OF the three pamphlets on this subject now before us, this is much the best in point of literary merit; the author arguing the subject, rather than advocating his particular opinions. A large extract from Mr. Ferrey's *Answer* will give the reader a very good idea of Mr. Hakewill's *Thoughts*.

"In a pamphlet lately published, entitled *Thoughts upon the Style of Architecture to be adopted in Rebuilding the Houses of Parliament*, the author has exhibited considerable skill in the playfulness of his pen, much enthusiasm in the advocacy of his opinions, but, I fear, much mistaken zeal for the advancement of architecture. No object of art, or science, can be depreciated, or rendered less worthy of public admiration, by being assailed with unmeasured abuse; and the writer who designates a justly admired class of architecture as 'misplaced ingenuity, distortion, and grimace,' evinces either a most unwarrantable dislike, or a total ignorance of its merits. Whether, therefore, he be affected by distaste or tastelessness, he is alike blamable for employing such unprofessional means of attack. Such blind declamation from a professor constitutes a despotism in matters of taste, by denying to others who differ from him in opinion, that respectability of judgment to which every scientific man is entitled, who adheres to this or that particular style, from a conviction, after deep research, that it merits his consideration. Thus much for the discourtesy, which cavils not, but impugns the taste of so many of his professional brethren. It is readily conceded that much dissatisfaction and regret is felt by the practitioners in Grecian and Roman architecture, that these styles should be excluded from the pale of competition; had the writer in question, partaking of these sentiments, endeavoured to have shown the superior claims of Grecian or Roman architecture from its character of harmony and unity with the adjoining piles in the locality, and thus urged, on professional grounds, the unsuitableness of the styles selected, he would have pursued a legitimate

course, though the result might not have been successful. Having, however, resorted to the summary and rash expedient of lauding classic, at the expense of pointed, architecture, by denouncing the merits of the latter without advancing proof, the public will easily discern that, from a prejudiced disposition, he neither seeks the opportunities, nor cares to make himself acquainted with them. The manner and tone in which the enquiry into the propriety of the selected style is conducted, possesses a specious mode of argument, which at first is calculated to induce a belief that all biassed thoughts are dismissed, and that the subject is sought to be clothed with the unerring garb of truth; it is, indeed, surprising, that remarks expressed under the influence of contemplative mind should, in many instances, be coupled with paragraphs so utterly at variance with surrounding facts; that the intelligence capable of arguing on philosophical inference in one case, should reject all the collateral influence in another.

"Here, however, we see the baneful effects of opinions under prejudiced circumstances; and, looking *à priori*, we must expect a tottering structure, built upon such an unsound base. It would be going beyond the intention of these few pages, to do more than prove the fallacious assertions adopted by the writer of *Thoughts upon the Style of Architecture to be adopted in Rebuilding the Houses of Parliament*. 'Those who think, and have the patriotism to wish, that the character of their countrymen may be raised by a judgment which will go forth to surrounding nations, must necessarily feel anxious that the cause of taste, triumphing every where else, should not be sacrificed in England to a desire to perpetuate the Gothic, a style becoming *daily more and more* obsolete, unsuited as it is to the prevailing sentiments of an age so enlightened.' Surely if this be the case, the writer might have spared his pains in the compilation of a pamphlet, to hurl at once into oblivion that which, on his own *ipse dixit*, he triumphantly exclaims is '*becoming daily more and more* obsolete.' But how stands the fact? Need I repeat a list of the numerous churches, palaces, seats, and public structures, which 'taste and genius' have erected, to hand down to posterity 'an abstract brief chronicle' of these times? Will it be credited, that the age in which the Parliament Houses are to be reconstructed in Gothic architecture, is the epoch, in which that style is daily '*becoming more and more* obsolete;' a period when our literature of all kinds teems with disquisitions, proving and eulogising its beauties; when volumes upon volumes have been, and continue to be, published, and yet the demand for fresh illustrations of its numberless charms continues? This undeniable fact is an illustrative epitome of the times in which we live. But, again, I am told that the Gothic 'is a style of doubtful origin, mute to our sympathies, divested as it is of that ease and purity of sentiment, which so eminently distinguish the arts of the present era.'

This is indeed but a repetition of the same mistaken observations which are so opposed to truth, that astonishment might here be at its height, but that the climax is more forcibly shown in the following extract, which, to the *cognoscenti*, may be considered a rich treat:—'And the moment so propitious to the development of talent, already great, having arrived, shall that talent not be allowed to soar to its height, but be doomed to crouch and wither in the groinings, vaultings, tracery, pointed roofs, and flying buttresses of Gothic buildings?'

"Such are the writer's notions of the character of the structures to be erected for our Parliament Houses; such are his remarks on Gothic architecture; and such a responding feeling to his expressed sentiments he vainly expects from the public. . . .

"The writer of *Thoughts, &c.*, has assumed a secondary system of scrutiny, which should ever give place to the primary consideration of architecture, as combined of science and art; and whatever be the production which arises from the expression of design or skill, it is not to be decried, through circumstances of accidental or temporary effect. He may further be assured, that nothing could more effectually tend to the disuse of classic architecture, than

the impartial application of his own theory to the indiscriminate usage of that style in this country to general purposes.

"But the fair question at issue is, whether the new Houses of Parliament may be made worthy of national importance in the style to be adopted, or whether classic architecture, in such a situation, would have been better? Had the writer been liberal enough to have admitted some beauties in Gothic architecture, he would, undoubtedly, have urged, on professional grounds, the necessity imposed by good taste of erecting buildings which should be in unison with the locality; and, however wittily he may have set forth the resemblance of the case under the amusing guise of '*a clump of thistles*,' over which, by frequently stumbling in blindness, he seems immoderately sore, the enlightened statesmen, acquainted with the precincts, and free from the film of prejudice, have ever viewed the indigenous plant as worthy of propagation, although not without its thorns!!!

"Had the committee to whom was intrusted the choice of architecture, &c., selected Gothic architecture despite of circumstances which should have led them to have selected Grecian or Roman, then an attempt might justly have been made to deter them from their purpose; but such is not the case; every thing concurred to show the propriety of keeping up the '*vegetable group*,' and we have yet to discover other reasons than those given to induce a hope that their decision may be revoked.

"If Grecian architecture claims nature as her prototype, it is not asserted with less truth that Gothic architecture is founded upon the same charm and principle, to which is added an increased portion of mathematical skill, combined with an endless variety of beauty in its ornaments, of which the germ may be found in the botanical works of nature only.

"Conceiving, then, that the author of *Thoughts upon the Style of Architecture to be adopted in the Rebuilding of the Houses of Parliament* has evinced a bent throughout the system of his reasoning consequent on his native prejudice, which aims at the overthrow of the style, and, by the vehemence of his expressions, shows the inferior estimate he entertains of others' opinions, let the public pause before giving implicit credence to his remarks, and I doubt not that the respective beauties and conveniences proper to the Grecian orders in their pure state, or as modified by the Romans and their successors in the Palladian school, will be fully admitted, without a bigoted exclusion of the style we are accustomed to term Gothic; nor ought its merits to be asserted to the disadvantage of classic style; each has its beauties, each has its proportions: with this conviction, which is recognised and felt by the public, it is somewhat surprising that any one should suffer his dislike to extend so far as to publish such bitter lamentation over a single instance of the application of Gothic architecture to our '*national monuments*.'"

ART. VIII. *First Annual Report of the Poor Law Commissioners for England and Wales.* Ordered by the House of Commons to be printed 10th August, 1835. Accompanied by 35 Sheets of *Plans, Elevations, and Sections, illustrative of Eight different Designs for Workhouses, by Order and under the Direction of His Majesty's Poor Law Commissioners.* By Sampson Kempthorne, Architect.

THESE plans appear to us, from a cursory inspection, excellently arranged; and it is most gratifying to see the attention that has been paid by the architect to the principles of separation and classification, to cleanliness, to ventilation, and to general convenience. Water closets are provided for all the sleeping wards;

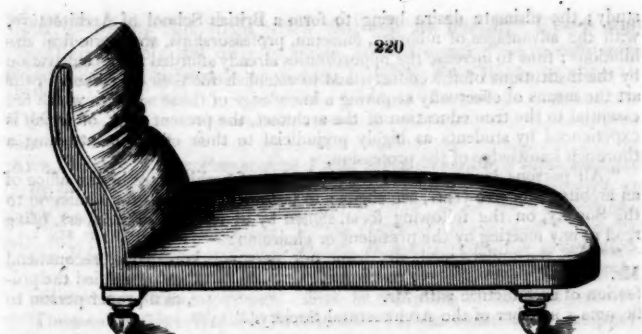
and both these and the yard privies are so contrived as to be continually cleansed by passing water through them. All the designs are arranged more or less on the panopticon principle, the master's house being in the centre, or in the focus of whatever may be the form of the plan; the wards, and all such parts of the buildings as require warming, are heated by hot-water pipes or by steam. There are baths, infirmaries, nurseries for children, schools, and, in short, every thing that can be required for health, and for keeping those inmates who are able to work constantly employed. For the aged, the infirm, and for the children during the hours when they are not at the workhouse school, there are gardens to keep in order; and a gardener is kept to direct the labours and operations requisite for that purpose. The produce of the gardens is consumed in the workhouse, or sold for its benefit. Such comfortable establishments under a corrupt system of management, where labour was not constantly enforced on all able to work, might soon create a greater demand for such communities than it would be possible to supply; but, under the vigilant management proposed to be adopted, there will be no temptation for any to enter them that are able to work, and can get employment elsewhere.

ART. IX. *The Cabinet-maker's Sketch-Book of plain and useful Designs.* Vol. I. consisting of Chair and Sofa Work. 4to; 24 Plates. London, 1835. 18s.

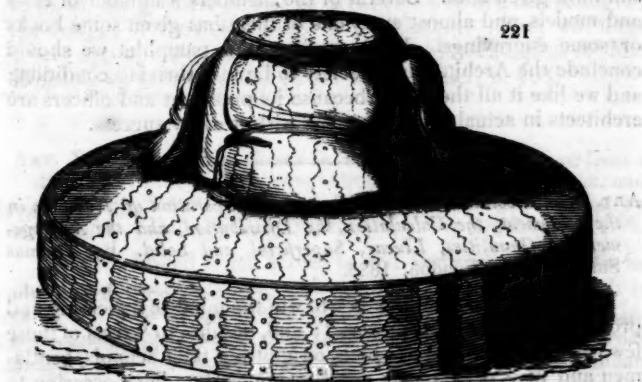
THE designs are modern, very distinctly and clearly lithographed, and the work cannot fail to be of real use to the upholsterer and cabinet-maker. As specimens supplementary to the designs for furniture in our *Encyclopædia of Cottage, Farm, and Villa Architecture and Furniture*, we give



an hourglass seat *fig. 218.*; a footstool, *fig. 219.*; a reading-seat, *fig. 220.*; and a circular Ottoman sofa, *fig. 221.* The last, besides its use in the drawingroom, may be made of straw, or, in some countries, of heath, and appropriately placed in the



centre of a large rustic summer-house. The reading seat (fig. 220.) is by no means elegant in form; but we can assert,



from experience, that it is exceedingly comfortable to sit on; not only the back, but the head, being supported by the peculiar form of the upper part of the end or support for the back.

ART. X. *Laws and Regulations of the Architectural Society, 35. Lincoln's Inn Fields. Instituted 1831. With a List of its Members, and of the Contributions to the Library, Museum, &c. Pamphlet, small 8vo. London, 1835.*

THE list consists of, 1. members, 2. amateur members, 3. honorary and corresponding members, 4. student members, and 5. officers and committee. The president is W. B. Clark, F.R.A.S., &c., architect, and the honorary secretary is George Mair, architect.

"The primary objects of this Society are the advancement and diffusion of architectural knowledge, by promoting the intercourse of those engaged in its

study; the ultimate desire being to form a British School of Architecture, with the advantages of a library, museum, professorships, and periodical exhibitions; thus to increase the opportunities already afforded for its cultivation by the institutions of the country, and to establish for their successors in the art the means of effectually acquiring a knowledge of those sciences which are essential to the true education of the architect, the present want of which is experienced by students as highly prejudicial to their efforts in attaining a thorough knowledge of the profession.

"All persons having studied the profession of architecture in the office of an architect, for five years, are eligible to become candidates for admission to the Society, on the following form, signed by at least three members, being read at any meeting by the president or chairman:—

"We, the undersigned, do, from our personal knowledge, recommend Mr. _____, residing at _____, having studied the profession of architecture with Mr. _____, as a proper person to become a member of the Architectural Society."

The contributions to the funds, museum, and library of the Architectural Society are considerable. Sir John Soane and his son have given 250*l*. Several of the members a number of casts and models, and almost every one of them has given some books or some engravings. In short, from this pamphlet we should conclude the Architectural Society to be in a thriving condition; and we like it all the better because its president and officers are architects in actual practice. We wish it every success.

ART. XI. *Evolution; or, the Power and Operation of Numbers in the Statement, the Calculation, the Distribution, and the Arrangement of Quantities, Linear, Superficial, and Solid.* By Thomas Smith. 8vo. London, 1835.

THE object of the author is "to win the mind to a pleasing and profitable exercise of its powers"; and, besides, to "treat of those few rules of arithmetic to which, on quitting their schools, gentlemen and professional men can be supposed to have occasion to refer." He also hopes that his book "will prove to be a short and easy introduction to mensuration, surveying, and gauging." The work may be characterised as the philosophy of arithmetic rendered familiar to the general reader; and we therefore very strongly recommend it to the young architect.

ART. XII. *The Chairman and Speaker's Guide; being an Essay towards a brief Digest of the Rules required for the orderly Conduct of a Debate. To which is prefixed an Essay on Public Meetings; Manner of proceeding with regard to them, &c.* By Thomas Smith, Author of "Evolution," "Lessons on Arithmetic," &c. 18mo. London, 1835.

As in the present day, more than in any other, almost every individual is liable to be called on to take some part in a public meeting, either professional or political, there is hardly a young

man to whom this little work will not be useful. Every man ought to be able not only to write, but to speak; and every man may become a tolerable proficient in both, if he begin in time.

ART. XIII. *Three Perspective Views taken from the Points specified by the Select Committee on rebuilding the Houses of Parliament, in their Twenty-ninth Resolution, and pointed out on the Lithographic Plan furnished to Architects by the Office of Woods and Forests, of the Parliamentary and other Public Buildings adjacent at Westminster, as they now exist, with the surrounding Scenery.* In outline, printed on drawing-paper. Size of the plate 17 in. by 9½ in. By Thomas Larkins Walker, Architect. In an extra folio wrapper. London, 1835. 5s. per set.

THESE plates are very neatly lithographed, and they cannot fail to be of the greatest service to architects who are competing in the designs of the new Houses of Parliament. They will form a very appropriate accompaniment to the elaborate plan of Mr. Richardson, recommended in our last Number, p. 464.

ART. XIV. *The Organ Screen in York Minster.* Engraved from a drawing by Frederick Hanway Abraham, Architect, of York, and of Keppel Street, London, by Henry Shaw, and printed by M^{rs} Queen. Dedicated, by permission, to the Archbishop of York.

THIS celebrated organ screen is well known to antiquaries as one of the most elaborate works of the kind in existence. It is executed in white freestone, and is 52 ft. long, and 23 ft. 3 in. high. Besides upwards of a hundred small figures, it is ornamented with the statues of fifteen English kings from William the Conqueror to Henry VI., of the natural size. The engraving before us is 21 in. by 2 ft. 2 in.; and it is sufficient commendation of it to state that the engraver is Mr. Shaw. Mr. Abraham's merits as a draughtsman are well known to be of the first-rate order; and, in short, a more beautiful specimen of art than that now before us is nowhere to be found.

ART. XV. *Literary Notices.*

TWENTY ONE Views, Plans, and Elevations of the Buildings in the Royal Gardens at Kew, selected from the work published in 1763, by Sir William Chambers, architect to the king, has just been published, price 21s.

The Transactions of the Institution of Civil Engineers is preparing for publication, in demy quarto, about 350 pages of letter-

press, and from fifteen to twenty very neatly engraved plates. Price from one guinea to one guinea and a half.

The Institution of Civil Engineers in London was established under the presidentship of the late Thomas Telford, Esq., in January, 1818, and received His Majesty's charter of incorporation in June, 1828. The objects of the Institution are, the acquirement of professional knowledge, and the advancement of mechanical philosophy; which objects are principally promoted by weekly meetings and conversations during the session, and by collecting from contributors essays on engineering subjects, and practical accounts and drawings of public works.

The Institution consists of members, corresponding members, associates, and honorary members. Those who reside in or near London have the advantage of attending the meetings of the Institution, from which corresponding members are, by their distance, debarred. In order, therefore, to impart to absent members the benefits of the Institution, and to extend the circle of its utility, a selection has been made, from its valuable collection of communications, of papers and drawings on such subjects as may at this period be acceptable to the profession, and to those who take an interest in the art; and this selection it is now proposed to embody in a volume of transactions.

The work will be printed in the best manner, with a new type, and upon superior paper; the plates, from elaborate drawings, will be accurately and very neatly engraved by Gladwin, and others equally eminent in mechanical engraving; and the volume will be published in December of this year.

A Practical Treatise on Locomotive Engines upon Railways is preparing for publication, in octavo, with plates. Price 12s.

This work is intended to show the construction, the mode of acting, and the effect of those engines in conveying heavy loads; to give the means of ascertaining, on a view of the machine, the velocity with which it will draw a given load, and the results it will produce under various circumstances and in different localities; to fix the proportions which are to be adopted in the construction of an engine, to make it answer any intended purpose; to show the quantity of fuel and water it will require, &c.; founded upon a great many new experiments made on a large scale, in a daily practice on the Liverpool and Manchester railway, with many different engines and considerable trains of carriages: to which is added an appendix showing the expense of conveying goods, by means of locomotives, on railroads. By the Chev. F. M. Guyonneau de Pambour, formerly a student of the Ecole Polytechnique, and late of the Royal Artillery, on the staff in the French service, and knight of the Royal order of the Légion d'Honneur, &c., during a residence in England for scientific purposes.

MISCELLANEOUS INTELLIGENCE.

ART. I. General Notices.

On the Expansibility of different Kinds of Stone. By Mr. Alex. J. Adie, Civil Engineer. — "This paper contains the results of an extensive series of experiments made upon different kinds of stone, as well as upon iron and upon brick, porcelain, and other artificial substances. The instrument employed was a pyrometer, of a simple construction, capable of determining quantities not greater than $\frac{1}{1000}$ of an inch. The length of the substances generally employed was 23 inches. The general result of these experiments is, that the ordinary building materials of stone expand but very little differently from cast iron, and that, consequently, the mixture of those materials in edifices is not injurious to their durability. The experiments from which the expansibility of the substances was numerically determined were made between the limits of ordinary atmospheric temperature and that of 212° ; steam being introduced for that purpose between the double casing of the instrument. The following results were obtained for the fractional expansion of the length, for a change of temperature of 180° Fahr.:—

Table of the Expansion of Stone, &c.

	Dec. of length of 180° Fahr.		Dec. of length of 180° Fahr.
1. Roman cement	- '0014349	8. Peterhead red granite	'0008968
2. Sicilian white marble	- '00110411	9. Arbroath pavement	- '0008985
3. Carrara marble	- '0006539	10. Caithness pavement	'0008947
4. Sandstone from the Liver Rock of Craig- leith Quarry	- '0011743	11. Greenstone from Ratho	'0008089
5. Cast iron, from a rod cut from a bar cast 2 in. square	- '00114676	12. Aberdeen grey granite	'00078943
6. Cast iron, from a rod cast half an inch square	'001102166	13. Best stock brick	- '0005502
7. Slate from Penrhyn Quarry, Wales	- '0010376	14. Fire brick	- '0004928
		15. Stalk of a Dutch to- bacco-pipe	- '0004373
		16. Round rod of Wedge- wood ware (11 in. long)	'00045294
		17. Black marble, from Galway, Ireland	- '00044519

(Proceedings of the Royal Society of Edinburgh. Jameson's Edin. New Phil. Journ., vol. xix. p. 207.)

ART. II. Domestic Notices.

ENGLAND.

A MONUMENT to the Memory of the late eminent Engineer, Thomas Telford, Esq., F.R.S.L. & E., &c., is proposed to be erected in Westminster Abbey; Subscriptions to the amount of 1100*l.* for which were received previously to the 15th of August last. Subscriptions are received by Messrs. Harries and Co., Bankers, London; James Hope, Esq., W. S., of Edinburgh; J. Gibb, Esq., of Aberdeen.

New Houses of Parliament. — Dr. Reid of Edinburgh, who has paid so much attention to the propagation of sound in rooms, has been to London, at the instance of the Committee for the rebuilding of the Houses of Parliament; a circumstance which, we think, does that body great credit. If you could induce the doctor to give you some information on this subject for the *Architectural Magazine*, I am sure it would be of great benefit to architects, who, judging from some of the new churches lately erected, know very little about the matter. If you find a church where the hearing is good in every part, and another where you cannot hear at all in several positions, and take an architect to both, and ask him what would be the effect of a speaker's voice placed

in a certain position, will he be able, *a priori*, to tell you? If you prove to him, that in the one church you hear every where very well, and in certain parts of another very ill, will he be able to tell you, *a posteriori*, the reasons? I fear not; at any rate, I have never met with an architect who could. — *Henry Thomas Browne. London, Sept. 1835.*

New Chapel. — A very handsome dissenters' chapel, in the Gothic style, is about to be erected in the Regent's Park, from the designs and under the superintendence of J. H. Taylor, Esq., architect. — *Amicus.*

Gloucestershire. — Your correspondent, Mr. Sopwith, the author of *A Treatise on Isometrical Projection*, and various other useful and ingenious works, has just made a complete survey of the Forest of Dean, both on and under the surface of the earth, for government. Perhaps the whole world does not furnish a more agreeable field for professional employment. As regards forest scenery, it greatly exceeds the New Forest, in Hampshire. Its geology is very interesting, being a perfect basin, and the outcrop of the strata being traceable all round, for a compass of eight or ten miles in diameter. — *H. B. Coleford, Forest of Dean, Sept. 27. 1835.*

IRELAND.

The Castlereagh new Meeting House, near Belfast, was opened in August last, and the following account of it is from the *Belfast News-Letter* of Aug. 25. 1835 : — "The first stone of the new Meeting House was laid in June, 1834, and the building was designed and erected under the superintendence of John Miller, Esq., architect. A critique on its merits has been published in a contemporary journal; and though we agree with the writer in almost every particular, yet we think it is evident that the proportions of the composition of the edifice are rather the effect of overruling circumstances than of the architect's deliberate choice; and his success should not be measured so much by the abstract merits of what he has accomplished, as by a due consideration of the difficulties which he has had to combat in the execution of his plans. For instance, in our eye the circular belfry exhibits a proof of limited funds in its apparently limited height as an architectural object, though the ordinary spectator will not take into account the circumstances alluded to; nor should he be called on to do so, for he is to judge of it as it is; but the judicious critic will at once admit these circumstances in extenuation of any defects which may be discovered; and hence he will appreciate the resources of the architect who has left the marks of a master hand on all parts of the building, embracing no little originality and invention in the outline, with equal boldness, and vigorously effective, though plain, detail. What is most extraordinary and unusual, the façade is pierced by only one opening, a door of Herculean dimensions, placed between the attached columns, which are raised on a podium or plinth, the deep recesses of which contribute materially to enhance the picturesque effect of the whole, thereby producing, not only a fine degree of chiaroscuro, but great perspective variety and force. The flanks have doors of smaller dimensions, with exceedingly deep plain lintels, so as partially to correspond with the centre. The same taste is conspicuous throughout the interior, which is plain, but effective. The original disposition of the plan is highly convenient for an auditory, as it allows a full view of the minister from every seat. The collocation of the columns and pilasters determines the situation of the gallery, under which the ceiling is quite novel, having beams crossing from column to wall, and between which are concave convex panels, of quite an unusual form, the beams projecting beyond the columns, and forming a support to additional pews round the house. The principal ceiling is subdivided by beams, having plain mouldings, connecting the whole into one harmonious figure. We cannot conclude without a passing remark on the pulpit, which appears to have been carefully handled in the execution, being a specimen of beautiful cabinet-work, the wood of which has been chosen with much good taste, as it is richly mottled mahogany, not

the usual curled wood so much in use for furniture. In fact, the execution has done every justice to the architect's design, which is quite unique, being a complete circle, one half of which stands out from the wall, the other half within a semicircular recess in the wall, having a domical top. The internal fitting up of the pulpit looks well; and the substitution of a large easy chair in the centre, for the minister, is a good change from the old fixed seat. It struck us that there is a little baldness in the blank space above the pulpit, on each side of the semicircular recess, which, if we might venture an architectural hint to Mr. Miller, who stands so high in his profession, would be improved by a handsome panel, enclosing a marble slab, having the Commandments inscribed on one side, and the Lord's Prayer on the other; or, possibly, scripture texts might be substituted. These embellishments are of a higher order than mere ornaments, and to say that they are so many helps to devotion, would, perchance, offend Presbyterian austerity; but, viewing them in the light of innocent symbols, we have yet to learn that such decorations are at all incompatible with the discipline of our Scottish Church."

We have written to Mr. Miller to request the favour of a plan of this Meeting House, as we are equally desirous of laying some designs for this class before our readers, as we are of publishing plans of churches. — *Cond.*

ART. III. *Retrospective Criticism.*

LITERARY Composition of Architects and Surveyors. (p. 470.)—I have just read the article signed A Solicitor (p. 470.), and am much surprised by the statement made in it respecting the literary composition of architects. The greater part of them having received a liberal education, it is by no means probable that they would commit errors either in grammar or syntax; as A Solicitor insinuates; but I presume that the "architects," whom your correspondent states he "has had a good deal to do with," have about as much claim to the title as the match-seller who styled himself a "timber merchant." It is rather ludicrous to hear A Solicitor complaining of the "jargon" of our profession; and were his plan adopted, of explaining technical terms by means of sketches, I think it is more than probable that the solicitors would require more draughtsmen than the architects. Your correspondent appears to know very little of the manner in which young architects employ their leisure time, since he assumes that it is all taken up in copying drawings; and when he advises them to study grammar and syntax, he appears to forget, that, were this advice addressed to the young men of his own profession, it would be more applicable; for the generality of young architects receive a much better education than attorneys' clerks. His attempt at a sneer is unworthy of notice; but I will tell Mr. Solicitor, that had he remembered the advice, *Ne sutor ultra crepidam*, and attended to his own profession, instead of attacking imaginary defects in another, it would, perhaps, have been of more advantage to himself; his clients (if he have any), and to the readers of this Magazine. — *G. B. W.* Oct. 1. 1835.

Projection, by T. Sopwith, &c. (p. 211.)—"Can three sides of a right-angled prism, orthographically represented, be seen in the projection, if one side is represented as a true square, or as a right-angled parallelogram?" To some readers, the above query, which appears in p. 211., may require explanation: it, together with the remarks appended to it, forms a continuation, and an attempted defence, of a criticism on my *Treatise on Isometrical Drawing*, which appeared, a few months ago, under the anonymous signature of J. R. (p. 46.) On perusing that criticism, I perceived that some of the statements in it were very incorrect; and, attributing them to the inexperience of the writer (who, with laudable discretion, conceals his name), I corrected his errors by a plain and simple explanation. (p. 142.) That explanation was based on true geometrical principles; and I confidently refer to every geometrical reader,

whether it does not fully refute the charge of "want of principle," which J. R. has alleged against certain diagrams * contained in my book. If that writer had possessed a common share of candour, he would either have rebutted the arguments it contains, or come forth from his hiding hole, and avowed the error into which he had fallen.

That J. R.'s charge does me great injustice; that his communications on the subject are replete with errors; that his observations are calculated to mislead your readers; and that he is very imperfectly acquainted with the nature of projection, will appear from the following observations, and from the able paper which Mr. Nicholson has contributed, "to prevent the dissemination of wrong principles."

"All those," says J. R., "who have a knowledge of perspective and of orthographical projection, are aware that orthographical projection is projected by parallel rays, which are all *perpendicular* to the plane." Such is not the case; for there exists a difference of opinion on the subject. A late and highly respectable authority, Mr. Bradley, in his *Treatise on Practical Geometry and Linear Perspective*, treats projection by parallel rays, which are all *oblique* to the plane, as orthographical projection. According to this authority, which J. R. may refute if he can, the diagrams, which he condemns for "want of principle," are true orthographical projections; but whether or not they are correctly termed orthographical is not material to the question in dispute; which is, are they correct in geometrical principle? Not only is the mode of projection used in these diagrams treated of by Mr. Bradley as an orthographic projection, but he even recommends it, for some purposes, as superior to the projection formed by rays perpendicular to the plane; which latter seems to be the only kind of parallel projection that has fallen within the compass of J. R.'s experience.

So far, however, from making a candid acknowledgement of error, J. R. next appears, not in the small print of "Retrospective Criticism," but blazoned forth on the fair and ample pages of the *Architectural Magazine*, in the stately form of an article on "Perspective." In this article he has made free use of my name in that gentlemanly manner in which anonymous writers peculiarly excel; though he prudently abstains from any attempt to answer the arguments contained in my last communication. He now considers it "necessary to be thus verbose, in order to obviate any mistake" (how candid!) "which might have arisen from a laconic description." J. R.'s former paper was written "for the information of the geometrical student." Would it not have been candid in J. R. to state whether he had, or had not, fallen into "any mistake"? Or could he not have referred the "student" to p. 142, where the "mistakes" are fully exposed? It is surprising how great a difference of opinion may happen to exist on the same subject. What J. R. terms the "mistakes of a laconic description," I am led to consider the blunders of egregious ignorance.

On the "verbose" and amended exposition of J. R.'s opinions (p. 211.), I beg, in justice to your readers and to myself, to offer a few remarks.

The query at the head of J. R.'s paper, with the remarks which follow it, seem to imply that I had treated the diagrams complained of as orthographical projections. Such is not the case. Speaking of ordinary orthographical projection, I referred to these drawings as "two other modes of projection." I stated the obvious fact, that they both exhibit an orthographical view, or elevation, of the front side; and, in explaining the construction of such drawings, I said that "the orthographical projection of the front being completed," and then proceeded to show how the other sides were to be drawn, by a different process. The expression, therefore, of a "right-angled prism *orthographically* represented," as applied to these drawings, is a virtual misstatement of the subject in dispute, under cover of which J. R. vainly attempts to escape from the position in which my former exposure (p. 142.) of his erroneous

* Figs. 4, 5, 7, 8, 10. and 11. of Plate xvii., and figs. 1. and 2. of Plate xxiv.

criticism has placed him; and in which, unless he cultivate a better knowledge of the subject, he is likely to remain.

According to J. R.'s views, all those who answer the query at the head of his paper in the affirmative are blockheads. (p. 211.) I have shown that a difference of opinion exists as to the precise meaning of "orthographical" projection. If J. R.'s definition is correct, the query is just as sensible as if he had asked whether two and two make four; for, under the condition of the rays falling perpendicularly on the plane, it is self-evident that it must be answered in the negative. It may be observed, that the introduction of the word "orthographically" renders the query altogether inapplicable to the subject in dispute; and that, according to Mr. Bradley's view of the subject, the said query must be answered in the affirmative. Whether the diagrams are projected orthographically is not the subject in dispute; J. R. contends that they are false in principle, and that by "no mode of projection whatever" can figures be so represented. Whether oblique parallel projection be orthographical or not, the principle, on which these drawings are projected is plain and obvious, and J. R.'s charge, of "want of principle," is clearly shown to be false.

The correctness of the principle by which the diagrams in question are drawn is confirmed by the fact of its existing in nature, and being deduced from the laws of nature, as exemplified in shadows. Its practical utility is evident, from the great ease and simplicity of its application to mechanical drawings; and, as regards its being true in principle, I am confirmed by the high authority of Mr. Bradley, Mr. Nicholson, Simonin, and other writers, whose united authorities form a powerful and decisive contradiction to the ignorant and unsupported assertion by which my anonymous assailant has endeavoured to injure the character of my book.

I can scarcely conceive that any writer would wilfully misstate the expressions of another; but certain it is, that the postscript of J. R.'s paper on Perspective (p. 213.) does contain a very palpable misrepresentation of my former communication. I said, in that paper (p. 142.), that "the shadows of the wires (i. e. a wire model of a house), falling on a plane perpendicular to the rays, would exhibit the orthographical projection of the house; and the same shadow, falling on a vertical plane, parallel to the front of the house, would exhibit the parallel projection of the house. In the latter case, it is evident that the front of the house would be geometrically represented; and that more or less of one or two adjoining sides would be shown, according to the greater or less obliquity of the rays of light; or, what is simpler still, let the wire model of a cube be held in the sunshine, so that its shadow may fall on a sheet of paper parallel to any two opposite surfaces of the cube; in which case, eight of the boundary lines or edges of the cube would be parallel to the plane of projection. The writer of the retrospective criticism (p. 45.) is altogether mistaken, when he states that it is impossible for three faces of a cube to be shown by any mode of projection whatever, if one face is represented geometrically, and the angles of that face are right angles; or, in other words, when the top and bottom horizontal lines of that face are parallel to the plane of projection. In the cases I have shown, the top and bottom horizontal lines are parallel to the plane of projection: one face is represented geometrically; and yet, so far is it from being impossible, under these circumstances, to exhibit three sides of a cube "on principle," it is not only possible, but is effected by the most obvious and simple principle connected with the science of geometry; viz. the representation of the shadow of an object on a plane parallel to one of its sides."

Such is the paragraph complete. Now let the reader judge whether, or not, the following comment is a gross perversion and misstatement of it:—

"We are told," says J. R.'s postscript (p. 213.), "by this gentleman, that the rays from an object are perpendicular to the plane: so far, so good; and then we are directed to hold the model of a wire cube in the sunshine, so that its shadow may fall on a sheet of paper parallel to any two opposite surfaces of the cube; in which case eight of the boundary lines, or edges, of the cube

would be parallel to the plane of projection." Now, reader, take this sentence, with the following, and mark the disingenuous author:—"More or less of one or two adjoining sides of a cube would be shown, according to the greater or less obliquity of the rays of light." "If the rays are perpendicular to the plane, and the two faces of a cube parallel to the plane, it is only Mr. Sopwith who can tell how, in this case, we can have the rays oblique to the cube."

It will be observed, that I speak of the shadow of the wire models under two conditions: the first is, that the rays fall perpendicularly on the plane of projection; the second infers no condition as to the direction of the rays, but only that the front of the house shall be parallel to the plane of projection, leaving the rays to fall with greater or less obliquity, as may suit the object of the designer. The conditions, which I describe as connected with the latter case only, J. R. applies to both, and endeavours to hold up to derision a plain and intelligible statement of geometrical matters of fact, which it is quite clear he is not able to understand.

Fig. 105., in p. 213., is represented "exactly after the manner of Mr. Sopwith's 'verti-horizontal' figures;" and, notwithstanding J. R.'s total ignorance of the matter, that figure is a correct projection of a cube, on a plane parallel to one of its sides, and, consequently, to eight of its boundary lines, or edges. A wire model of a cube may be held in the sunshine, so that its shadow shall fall line for line on fig. 105.; and thus the very diagram which J. R. exhibits in refutation of this mode of projection may be turned into a tolerably convincing proof of his own want of knowledge on the subject. Perhaps J. R. will soon discover that the sun shines on a wrong principle!

In conclusion, I have found in J. R.'s communications neither the candour nor liberality of an intelligent critic; but the substance of much error, and of very careless, if not wilful, misrepresentations. Notwithstanding the puerile witticism on the shadows of the wire cube, geometrical readers need not be told that the elucidation of projection and perspective, by the doctrine of shadows, is correct in principle, and highly explanatory. Neither J. R., nor any one else, can establish the "want of principle" in the diagrams alluded to; and he must be content to preserve, in his own collection, those drawings, together with his own, as testimonies of his critical incapacity. As to the further objects which he proposes to "bring before my vision," I heartily wish him success. I recommend him to do the best he can; and not to be "too laconic," lest "a mistake might arise." I shall be truly glad to profit by his remarks, content if I am spared the painful task of exposing ignorance and correcting a departure from truth.—*T. Sopwith.*

Comparative Merits of the Hot-Water Systems of Heating, &c. (p. 407.)—Having read the stringent and clever, but somewhat censorious, letter of your correspondent, Censor, "On the comparative Merits of the various Hot-Water Systems," I am desirous to offer a few humble comments upon it. I will, at once, confess that I am one of that numerous "fry," or rather boil, of "circulators," whom he so unceremoniously denounces as alluring the public into all the disquietudes of hot water, under the specious guise of its being a grand specific for "all the ills that cold is heir to," but secretly, with no other view than a sordid desire to pour the circulating medium into their own coffers. Having, personally, to complain of the sin of omission, rather than of commission, I shall pass by the uncharitable and illiberal *animus* of this insinuation, in the hope that Censor's sense of justice and love of truth will breathe a milder spirit of denunciation over his future lucubrations. In a writer of so much intelligence, and possessing such evident qualifications for the task he has undertaken, it is matter of great regret, that, with the additional advantage of having the materials around him for strengthening and extending his knowledge of his subject, Censor should have failed to give the public that full and complete view of the hot-water system which the title of his paper pledges him to communicate. In this respect, however, I am sorry to say, he appears to me to have followed the course pursued by all the recent writers on this

topic which I have met with; who, one and all, would seem to have taken "a solemn oath of silence" against a particular system of heating by hot water, which, nevertheless, has now been before the public for several years; which has been both extensively and successfully introduced; and which, in the opinion of some persons, goes far to disprove the censures and attacks which, from time to time, have been so unsparingly inflicted (and by none with greater rigour than Censor) on this popular system of warming.

One of Censor's first allegations is, that the "system of heating buildings by hot-water apparatus is altogether inferior to steam and other methods, because the feebleness of its heating power renders it impossible to give that ventilation, in cold weather, which is essential to health; and that the feeble power arises from inability to boil the water, which, in most instances, is far below the boiling point." That so serious a defect as want of adequate heating power is *not* an inherent vice of hot-water apparatus, when rightly constructed and applied, I will endeavour to show by fact, and not assertion. The new Town Hall at Birmingham is warmed by hot-water apparatus; the boiler and heating vessels of which contain 800 gallons of water; and this volume of water can be, and has been, raised by the aid of a single fire, from the mean temperature of 52° to boiling, or 212° , in an hour and a half; the heating surfaces being, at the same time, exposed to the cooling effect of a room with a cubic content of 500,000 ft.: and, further, the heat of the water was kept at a minimum temperature of 200° during a whole day; while the air of this immense room was, at the same time, sustained by the apparatus at a temperature of 55° ; the external air ranging from 38° to 43° . Can it, then, be said, that feebleness of heating power is an inherent defect of all hot-water apparatus? With respect to ventilation, in the strict and scientific sense of that word, I presume I need not acquaint Censor that there are few problems of more difficult solution, than that involving ventilation on sound principles; but I will venture to say, that no system of heating possesses so many important aids to ventilation as the hot-water system, when skilfully and properly applied.

The next offence with which Censor charges the system is, that it "does not economise fuel;" and, further, that, "if the heat obtained be compared with the consumption of fuel, it will be found, with the exception of the common open grate, one of the least economical modes of distributing warmth." Here, again, I will offer a practical example in refutation of Censor's dicta. By the use of a hot-water apparatus I have sustained a room 36 ft. long, 23 ft. wide, and 10 ft. 6 in. high, with a cooling surface of glass windows, measuring 100 ft. superficial, at a maximum temperature of 63° , and a minimum of 50° (the external air being 40°), for 48 hours, by the expenditure of one shilling's worth of fuel, which was used during the first 12 hours of the term; and for 15 out of the 48 hours there was no fire at all kept under the boiler. It is true that this trial of the hot-water system was an experimental one, and, therefore, conducted with the needful care and attention, and also with the accuracy of an experiment; but it is equally true that the same apparatus has been in use in the same situation, and for the same purpose, for several years past, and does not consume more than one shilling's worth of fuel in 24 hours (a day and night) in the coldest weather. I feel entitled to contend, therefore, that it is not only incorrect to say that there is no economy of fuel in hot-water apparatus, but I will assert that there is no method of producing artificial heat, for the purpose of warming air, that will attain the object with equal certainty, and with so little labour and expense.

Censor finally sums up the remaining "inconveniences, inseparable from the hot-water system," and declares them to be, "under every form, and to whatever use it may be applied," as follows:— "Leakage of pipes," "which must also be frequently of different diameters;" "checked circulation by dipping to pass under doors;" "a necessity, in most cases, of placing the heat-distributing surfaces somewhere close to the walls of the space to be heated;" "weight of water and of tubes on floors;" "furring of pipes by

sediment;" "difficulty of repairs;" "*cum multis aliis*," which, "not being hypercritical," he passes over. Now, there can be no doubt that, if the hot-water system, under all and every form whatever, carries "a tail" with so many unsound "joints" in it as are here enumerated, the grand specific cannot much longer be administered, even with the aid of "eager puffing." My antidote for them all, however, shall be "a plain unvarnished tale." One of the largest and most splendid private residences in England, Penrhyn Castle, the seat of G. H. Dawkins Pennant, Esq., is warmed by hot-water apparatus. The great hall alone is 70 ft. long, 50 ft. wide, and 42 ft. high; the keep is 100 ft. high; and the staircases, vestibule, library, chapel, dining-room, &c., are all of corresponding magnitude; and yet there are no pipes whatever employed for the heating surfaces: the whole of the apparatus, which is of great extent and power, is contained in the basement story of the building; and not a drop of water circulates at a higher level, nor beyond the walls of the basement rooms, in which the boilers and hot-water stoves are fixed. Looking, then, "first on that picture, and then on this," who will have the "utter hardihood" to proclaim that "the hot-water system owes much of its celebrity, and much of its extensive use, to the same causes that render Morrison's Pills, or Rowland's Kalydor so famous?" I have only to add, that, as your correspondent, Censor, fights from behind the shield of a *nom de guerre*, I propose to follow so praiseworthy an example; but, whenever he shall think proper to produce the real "Simon Pure," I will drop the mask of — *Hydro-Camine*. Bristol, Sept. 15. 1835.

Buildings in Ireland. — I quite agree with your correspondent, R. V., in his admiration of the church near Kingstown, having been equally struck by the originality and beauty of its style; and I regretted much being unable to make a sketch. I have no recollection of the Gothic building he alludes to, but noticed a very elegant Ionic building, apparently not long finished, near the spot he mentions (St. George's Church): it is the Jesuits' Church, Upper Gardener Street.

I think some of our architects might take many useful hints from the late Irish Houses of Parliament (now used as the Bank of Ireland), the approaches to which, and the planning of the surrounding offices, are exceedingly good.

Some of the new buildings at Cork are in very good taste. The new Sessions House, now nearly completed, from the designs of Mr. Payne, architect, does credit to that gentleman's ability, both as to plan and elevation. The portico is extremely chaste and elegant: it is built of a blue limestone, peculiar, I believe, to Cork, and which is dug from a large quarry close at hand. There is also a remarkably handsome Roman Catholic Chapel, in the Gothic style, now erecting, of the same material. Some of the private houses and villas, which stand on the banks of the river, are worthy of notice; and the Black Rock Castle, built by the corporation, is a most picturesque object. — *Amicus*. London, Sept. 12. 1835.

Street Architecture. — I think you have made a slight mistake in an article on street architecture, in No. II. for April. You mention Mr. Fearon's house, in Bond Street, as displaying dignity of appearance. I apprehend you mean the house occupied by a wine merchant (Lambe, I think, is the name) a few doors southward, which presents a fine elevation; while Mr. Fearon's, above the ground-floor, is plain brick, and the shop front has no particular merit that I can discover. There are many defects in the fronts of the houses in Pall Mall, opposite the Travellers' Club: the tall and slender piers have a very weak and flimsy appearance, especially overhung as they are by an enormous cornice; the doors and windows are also much too narrow. I think there are several superior to those you have named; for instance, the banking house of Messrs. Herries and Farquhar, in St. James's Street; Messrs. Fortnum and Mason's, in Piccadilly; and Messrs. Hancock and Rixon's, in Cockspur Street. — *Id.*